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Prescriptions for Health
Recommandations pour la santé

Report
of the
Pharmaceutical
Inquiry
of Ontario

Rapport
du Comité
d'enquête
de l'Ontario
sur les produits
pharmaceutiques

91-01103/

Prescriptions for Health

Report of the Pharmaceutical Inquiry of Ontario

Recommandations pour la santé

Rapport du Comité d'enquête de l'Ontario sur les produits pharmaceutiques

Chairman:/Président:
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PHARMACEUTICAL
INQUIRY OF ONTARIO

July, 1990

The Honorable Elinor Caplan
Minister of Health
Queen's Park
Toronto, Ontario

Dear Minister:

By Order-in-Council dated May 26, 1988, pursuant to section 9 of the Ministry of Health Act, R.S.O. 180, chapter 280, we were appointed to examine all matters pertaining to the acquisition, distribution, prescribing, dispensing and use of prescription drugs in Ontario. We have completed our Inquiry and hereby respectfully submit our findings and recommendations.

Yours very truly,

Frederick Lowy, Chairman

Reva Spunt

Michael Gordon

Jake Thiessen

Martha Jordan

Donald Webster

Richard Moulton

William Wensley

D'ENQUÊTE DE L'ONTARIO
SUR LES PRODUITS
PHARMACEUTIQUES

Juillet 1990

L'honorable Elinor Caplan
Ministre de la Santé
Queen's Park
Toronto (Ontario)

Madame la ministre,

En vertu d'un décret daté du 26 mai 1988, par l'application de l'article 9 de la Loi sur le ministère de la Santé, L.R.O. 180, chapitre 280, nous avons été nommés pour étudier toutes les questions afférentes à l'acquisition, la distribution, la prescription, la délivrance et l'utilisation des produits de prescription en Ontario. Nous avons terminé notre enquête et vous soumettons respectueusement nos conclusions et recommandations, par les présentes.

Nous vous prions d'agréer, Madame la ministre, l'expression de nos sentiments les plus respectueux.

Frederick Lowy, président

Reva Spunt

Michael Gordon

Jake Thiessen

Martha Jordan

Donald Webster

Richard Moulton

William Wensley

Acknowledgements

It is with much gratitude that I acknowledge the contributions of the people who made the work of the Inquiry possible.

My colleagues on the Committee of Inquiry devoted themselves to the task with enthusiasm. They skilfully brought to bear diverse backgrounds and perspectives on the variety of problems encompassed by our broad mandate.

The Committee had the good fortune to work with an exceptionally able staff. Ms. Wendy Kennedy, the Inquiry's executive director, successfully applied her rich background in law, management and the pharmaceutical industry and is largely responsible for the smooth conduct of the work. She received high quality assistance from Ms. Michelle Chibba whose research skills served the Committee well. Professor Jack Williams, our distinguished research director, coordinated the external consultants and undertook the daunting task of collecting relevant background material. The Inquiry was able to count on first rate clerical support from Ms. Betty Reid, assisted from time to time by Ms. Cathy McPherson and Ms. Jenifer Rush.

The help of our external consultants is also acknowledged with thanks. They are professors R. Cockerill, J. Frank, J. Hurley, P. Gorecki, P. Williams and Ms. C. Hardt-Zeldin, whose findings are published in Volume II of this report and professors H. Eastman and J. Gordon, whose valuable advice we drew on as needed.

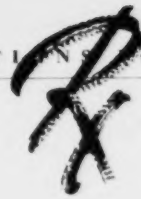
We are all immensely grateful to Ms. Mary-Catherine Lindberg, assistant Deputy Minister, her predecessor, Dr. Dennis Psutka and the staff of the drug programs branch of the Ministry of Health, especially Mr. Gordon Ventura. They extended us full cooperation and greatly facilitated the work of the Inquiry.

Finally, I record my thanks to Mr. Joerg Ostermann who so ably supervised the editing of this report and the communications and information branch of the Ministry which was responsible for its production.

To all I express my appreciation.

Fred Lowy

Frederick H. Lowy
Chairman



Executive Summary

Report of the Pharmaceutical Inquiry of Ontario

The Pharmaceutical Inquiry of Ontario was established to examine the role and influence of the government of Ontario with respect to prescription drugs. Although a major reason for its establishment was concern over the steep rise in the cost of government drug programs—about 20 per cent annually and 508 per cent over the past decade—the Inquiry did not regard cost containment as its only, or even primary, task.

The report contains 147 recommendations. Most of these are directed to the government of Ontario which commissioned the Inquiry, but some require consideration by professional associations, the statutory bodies that regulate the health professions in Ontario, the five university health science centres, pharmaceutical manufacturers and distributors, and the public .

We are convinced that these recommendations, when implemented, will contribute toward the achievement of accessible, higher quality treatment for those Ontarians who need prescription drugs, and will help eliminate unnecessary public expenditure.

The committee reached several major conclusions:

A

Ontarians generally receive excellent treatment involving prescription drugs. For the most part, pharmaceutical products are safe, effective and appropriately prescribed, dispensed and used. Prescription drugs are generally available promptly. They are affordable for most Ontario residents; about 1.5 million people (16 per cent of the population), including all seniors and persons receiving social assistance, qualify for government-financed drug programs. In addition, approximately 6.7 million individuals (70 per cent) have access to private insurance plans that cover most or all drug costs; many other Ontario residents pay for drugs out-of-pocket.

Since prescription drugs are an important component of modern health care, the Committee found all this reassuring.

B

However, even good programs can be improved. The Committee identified a number of problem areas that require attention and to which the recommendations are directed.

Among these are the following:

- Some pharmaceutical products listed in the Ontario Drug Benefit plan formulary (the costs of which are reimbursed with public funds) are sub-optimally effective and/or have unfavourable benefit/risk ratios.
- Physicians are not as well prepared educationally for prescribing the thousands of drug products available as they might be, especially with respect to the elderly. The continuing education of physicians with respect to the use of new drug products requires improvement.
- Pharmacists are not meeting their full professional potential as members of the health care team.
- Some Ontarians who need prescription drugs do not have ready access to them; they do not qualify for government programs because they are under 65 and are not receiving social assistance and they cannot purchase adequate private insurance. The two groups most at risk are those who do not have insurance through the workplace but have low incomes (the "working poor") and people with extraordinary drug costs due to severe chronic disease or disability. An estimated 600,000 to 700,000 individuals fall into one of these groups and do not have adequate access to needed drugs.

C

Canadian governments must continue to assume major responsibility in the prescription drug field; specifically, they must ensure that drugs are effective and affordable. Coordination among federal and provincial ministries is less than optimal. There is no national policy regarding drug interchangeability and the process of approval and licensing of drugs is more complicated and time consuming than it needs to be. Although provincial government policies have encouraged generic drug product use, prescription drug costs have not been well contained.

Recommendations are made to address these and other problem areas identified by the Inquiry.

A chapter-by-chapter summary of the report follows.

Chapter I Introduction

The Inquiry recognized that the broad terms of reference could not be investigated in depth during the 19 month mandate, later extended to 22 months. The decision was taken to focus on the three principal objectives of our mandate: to improve the quality of pharmacotherapy in Ontario, to ensure appropriate access to necessary medications for all Ontarians; and to contain prescription drug costs which have been rising steeply.

Numerous groups and individuals contributed advice, assistance and information–some of it unsolicited, most of it through public hearings or as a direct response to a specific request—during the course of the inquiry's work. The inquiry also reviewed government drug programs, previous studies and reports and relevant legislation and commissioned research projects to provide supplementary information.

Four interim progress reports were released to the Minister of Health; these are presented in the appropriate context within this report.

Chapter II Objectives of the Inquiry —Optimal Drug Therapy

It is the basis of the Inquiry that Ontarians should benefit from a system that will assure optimal drug treatment which is appropriate, accessible, affordable and conserves scarce resources. Prescription drugs play roles of varying importance in health care; a major role in the treatment of disease and in the relief of symptoms, and a much smaller role in health promotion, illness prevention, rehabilitation and in response to life stress. There is no place for prescription drugs as recreational agents.

The Committee examined the appropriate role of governments and determined that while the professions and consumers themselves have important parts to play with regard to prescribing, dispensing and use of prescription drugs, the main responsibility with respect to assuring drug quality, appropriate access and affordability rests with government, with the Ontario Ministry of Health playing the leading role in each case.

Chapter III Prescription Drug Programs in Ontario

The history of prescription drug programs in Ontario is reviewed in this chapter.

Public funding for prescribed drugs in Ontario began with the federal Hospital Insurance and Diagnostic Services Act, which came into effect in 1958 (Ontario joined in 1959.) Under the program, insured medical services in hospitals included prescribed drugs. Over the years that followed, a number of programs by municipal, provincial and federal governments extended various health programs to people requiring social assistance. Private health insurance plans also began to assist with drug costs.

The 1964 Hall Royal Commission laid the foundations for the Canada Health Act (1968) upon which our health care system is based.

The Hall Commission recommended that outpatient prescription drugs, as well as in-hospital drugs, be included as a publically insured benefit and a $1 contributory payment for most prescriptions was proposed. However, contrary to this recommendation, the national health insurance program established by the Canada Health Act did not include outpatient prescription drugs.

During the late 1960s, the provincial government took steps to facilitate the prescribing of generic drug products. Also during this period, the Drug Quality and Therapeutics Committee (DQTC), an independent advisory group to the Minister of Health which assured the quality of Ontario drug products was struck, and the CDI, or comparative drug index, which evolved into the Ontario Drug Benefit (ODB) formulary, was established.

In 1974, the provincial government introduced the ODB plan, initially to provide free drugs to senior citizens eligible for guaranteed income supplement benefits and to recipients of other government social assistance programs. A year later, the program was extended to all Ontario residents aged 65 and over. Eligible benefits were listed in the formulary, which set price limits for multi-source drugs by publishing the amount the government would reimburse for the drug product in question. The DQTC recommended drugs to be admitted to the formulary, assured the quality of the drugs and determined which were interchangeable.

Bills 54 and 55, respectively the Ontario Drug Benefit Act and the Prescription Drug Cost Regulation Act, were put into force at the end of 1986. Bill 54 gave the government the authority to manage the ODB program effectively while Bill 55 was to ensure that consumers get the information needed to make informed, economical drug purchases.

From 1978 to 1988, the ODB plan experienced an average annual increase of 20.4 per cent, making it one of the fastest growing health care programs over the period; the total paid for the program in 1988-89 was $637.9 million.

Chapter IV The Formulary and the DQTC

The Inquiry believes that a number of shortcomings are associated with the formulary as it exists today: it does not contain information regarding common doses; it does not advise treatment strategies; it is said not to be user friendly. Most important, it is not used by most prescribers. The Committee considered two options: elimination or modification of the formulary, and ultimately opted for the latter alternative.

To effect the desired changes, the Committee has made recommendations directed to: creation of a new formulary; a review of all products currently listed with respect to efficacy, safety, equivalence and cost; the development of categories for general and restricted use; not requiring a manufacturers' submission in order to list drugs; regular reevaluation monitoring to increase prescribers accountability; the possible reimbursement of nonformulary drugs; listings for nonconventional dosage forms, mechanisms to promote generic prescribing and a continuous system of product review.

The DQTC determines which drugs should be contained in the formulary, under which categories, and which products are interchangeable. It is composed of physicians, pharmacists and scientists who have the recognized expertise to advise the Minister, aided by external consultants who furnish reviews and advice. Some submissions to the Inquiry advocated abolishing the DQTC and although alternatives can be envisioned, there is no compelling reason which dictates a change. However, the Committee does recommend an expanded mandate to permit more effective evaluation of cost factors and the impact of formulary changes, and

more communication between health care professionals and the DQTC.

With regard to "special authorization" (SA) products–drugs not on the regular formulary but considered necessary to good health in particular instances–the Committee recommended in its interim report of December, 1988 that the SA program be discontinued and all drugs authorized under the ODB program be approved by the DQTC. Among a number of other recommendations in this area, the Inquiry also recommends that the formulary contain limited use and regular use categories and the DQTC establish a mechanism for quick review of drugs which represent major therapeutic advances.

On the subject of drug interchangeability, the Committee recommends that the present policy which promotes generic drug substitution should be continued; pharmacists should continue to be reimbursed only at the price of the lowest equivalent drug product, and should refill prescriptions with the product originally dispensed when the price is equivalent; they should be reimbursed for a "no-substitution" prescription of a higher priced product only when there is an approved reason for this; the patient should have the option of paying the difference in price in the case of "no-substitution" prescriptions; special arrangements should be made if the patient cannot tolerate the lowest price product; pharmacists should inform the patient and prescriber when substitution has occurred; and manufacturers should publicize appropriate information when a new generic first comes into general use.

Chapter V Acquisition of Drugs

The pharmaceutical industry is divided into two main groups: innovative and generic manufacturers. The innovative, or brand-name segment in Canada falls largely to the multinationals, mainly through manufacturing and distribution subsidiaries. Compulsory licensing legislation is responsible for the growth of the generic segment which is comprised largely of Canadian owned manufacturers. Overall, the industry is highly profitable and growing more quickly in Canada than it is world-wide.

Through the formulary, the province establishes the "best available price"–or BAP–the lowest price for which that product is available in Canada for sale in Ontario. To be legally marketed in Canada, a drug must be approved for sale by the federal government's Health Protection Branch (HPB); obtaining this approval can be a time consuming process. The Ontario government, through the DQTC, determines whether two or more brands are bioequivalent and assumes legal liability for pharmacists' dispensing the least expensive equivalent brand. To streamline this process, the Inquiry recommends that Ontario take the lead in promoting a Canada-wide interchangeability policy.

The Committee also recommends a maximum level for the introductory price of new generics; maintenance of the BAP concept; a formula to roll back drug prices and limit increases to the CPI; a limit to future price increases; an auditing mechanism to retroactively adjust the reimbursement of some pharmacists; and a disclosure requirement on the part of pharmacists in cases where consumers present non-ODB prescriptions.

This section also deals with hospital purchasing plans and proposes that the concept of a limited formulary be supported and facilitated for smaller hospitals, nursing homes and homes for the aged and in community practice.

Chapter VI Distribution of Drugs

There are some major problems with distribution of drugs in Ontario involving the changing relationships between retail pharmacies and wholesalers due to

- direct group buying by chain and franchise pharmacies;
- increased generic competition; and
- a wholesaler upcharge, not recoverable by the pharmacist, which rewards those who purchase directly from the manufacturer.

In addressing these problems, the Committee believed that certain principles had to be protected: drugs must be available quickly to all who need them, without regard for geographic location; distribution should be revenue-neutral to pharmacists; the recommendations should not require additional public funds; the recommendations should not result in windfall "distribution profits" for manufacturers; and distribution costs should be paid by those who incur them.

The Committee considered alternatives and asked for responses from interested outside parties. After presenting a number of alternatives in the third quarterly report, the Committee held a day of open hearings to further illuminate the situation. With the broader picture now emerging, the Committee puts forward recommendations which addressed the principles defined earlier. These include: the establishment of minimum standards for wholesalers which address fast, province-wide distribution; permitting wholesalers to enter into agency distribution agreements with manufacturers; reduction of the percentage added to BAP to reflect the actual amount the pharmacist must pay to the wholesaler and eliminating the upcharge added to BAP for direct sales; ensuring that no increase in BAP is allowed when a manufacturer moves from indirect to direct sales; and renegotiation of the fee structure by which pharmacists are reimbursed to reflect the reduced upcharge and the expanded professional role of the pharmacist.

The chapter examines the problems with Ontario Government Pharmaceutical and Medical Supply Services (OGPMSS) and recommends that: psychiatric hospitals be allowed to use the group purchasing plan of the Ontario Hospital Association; that MOH engage an outside group of consultants to examine the possibility of MOH divesting itself of purchasing, warehousing and distribution functions carried out through OGPMSS or supply and services branch, and to develop efficient alternatives to services being provided for long-term care facilities.

The section on drug distribution concludes by examining the hospital unit dose system and recommends that the unit dose/IV admixture program be the system of choice for drug delivery in hospitals above a certain size and that hospitals receive funding for conversion to the unit dose system.

Chapter VII The Prescribing of Drugs

The role of the physician in the drug prescription scenario is examined from both the theoretical and practical points of view. The seventh chapter considers the prescribing of drugs, the key role of the physician as prescriber, the education of physicians for this role and the ways in which prescribing can be improved.

Information models which illustrate the factors affecting physicians' decisions are reviewed and the recommendation is made that rational pharmacotherapy should be the goal for all concerned with the use of prescription drugs in Ontario.

The Committee also recommends investigation of the possibility of shared funding between the industry and the MOH for an Ontario centre for the study and improvement of drug prescribing. Discussions on informed consent to treatment and the physician's role as either patient advocate or gatekeeper for society lead to the recommendation that individual prescribers remain responsible for individual patients, while organized medicine should play a role in protecting society's resources.

Physician education as it relates to therapeutics—at the undergraduate, postgraduate and continuing medical education levels—receives attention. The Inquiry concludes that prescribing strategies are insufficiently addressed in basic medical pharmacology courses and training in prescribing depends on variable apprenticeship experiences. To address this deficiency, the Inquiry recommends initiatives at each of Ontario's medical schools to: change curricula to emphasize good prescribing practices; integrate basic and clinical sciences, particularly pharmacology and pharmacotherapy; recognize the differences in the type of morbidity found in teaching hospitals and community practice; place more emphasis on the critical appraisal of drug products and on treatment needs of the elderly.

At the postgraduate level, initiatives should include regular review of pharmacological aspects of therapy; improved integration of clinical pharmacology in all services including surgical units; improved auditing procedures regarding the use of drug products; and a specific geriatric experience at the intern and residency level.

In order to ensure that health care providers have access to information that promotes rational prescribing on a continuing basis, the Committee recommends effective programs in continuing medical education; innovative post-marketing surveillance studies which involve large numbers of family practitioners, and development of pilot drug utilization review programs.

After examining attitudes of physicians to their education as a preparation for prescribing drugs, as well as the roles of government and the medical associations, the Committee recommends the development of prescribing guidelines by organized medicine.

The Committee also makes recommendations in connection with a regularly updated publication containing guidelines for prescribing based on objective information about preferred drug products; the restricted use of especially expensive medications for which less costly alternatives are available; continued development and use of restricted hospital formularies; extension of the restricted formulary approach to group clinics and other health care facilities; the use of generic names in writing and labelling of prescriptions; and the promotion of regular organized reviews of drug treatment.

Turning to the relationship between manufacturers and physicians, the Committee recommends pilot projects to test unbiased non-commercial detailing and the development of ethical guidelines for physician/ industry interaction. The chapter concludes with discussion and recommendations concerning: the

establishment of a department of clinical pharmacology in each Ontario medical school; mechanisms for increased liaison between physicians and pharmacists; creation of a drug information service to provide assessment of high cost drugs; and review of over-the-counter medications listed in the formulary to assign them either to the general or restricted use categories.

Chapter VIII Dispensing/ Administration

One of the main areas of the Inquiry's mandate deals with the dispensing of drugs and the role of the key player in that function–the pharmacist; this section on dispensing constituted the subject of the Inquiry's fourth interim report. The Committee believes that the recommendations in this area will, if adopted, lead to a far-reaching and desirable redefinition of the role of the pharmacist and that Ontario has an opportunity to exert national and international leadership in this regard.

In developing the recommendations, the Committee considered that the responsibilities of the pharmacist encompass two main functions: cognitive, patient-oriented activities, such as consulting with patients, prescribers and other health care professionals, and those which are product-oriented, such as acquiring, storing, labelling, packaging, dispensing and record keeping. Problems related to both of these functions are reflected in the report.

The economics of current community pharmacy practice may have a negative impact on the provision of patient-oriented services because the payment system is structured to reimburse pharmacists on the basis of drugs dispensed rather than professional services rendered. Strategies are required to reward delivery of desirable patient-oriented services while the traditional responsibility for the dispensing functions of the pharmacist is maintained. The report also examines factors leading to change in the practice of pharmacy, such as changes in public and professional expectations, the ageing of our population, pressures to contain costs, demand for pharmacists exceeding supply, increasing professional specialization, changing technology and questions about maintaining professional competence.

Product-related recommendations deal with the expanding role of non-professional auxiliary personnel, information systems to deal with adverse drug interaction information, packaging standards and consumer-friendly labelling, specifically as this relates to patients with special information needs.

Patient-related recommendations cover public education, with particular emphasis on seniors; necessity for medication profiles; "smart cards; " pharmacists' access to patient diagnoses; reimbursement for patient consultation; an expanded clinical role for pharmacists; community drug therapy committees; and recommendations dealing with changes in the education of the professional. Recommended changes in education include a restructuring of current pharmacy training; a reduction in the size of the University of Toronto's pharmacy faculty; the creation of a new faculty of pharmacy; the creation of a doctoral program in pharmacy; joint instruction for students of the faculties of pharmacy and medicine; and increased emphasis on inter-professional communications in the training of medical, nursing and pharmacy students.

Chapter IX Utilization

This chapter, on consumers and pharmaceutical care, synthesizes diverse data to present a demographic profile of the consumers of health services in Ontario.

An examination of coverage under the Ontario Drug Benefit plan, as well as private health care insurance, reveals that there are special problems of access to needed drugs related to certain categories of individuals, particularly low income individuals and families not covered by old age and social assistance benefits, and individuals with catastrophic drug costs. The Committee recommends that drug costs for these categories now be covered, but that there should be a co-payment for those with incomes above social assistance levels. A second recommendation, which follows an examination of demand elasticity when consumers have to pay part of their drug costs, is that recipients of ODB benefits who are not on social assistance should pay a portion of each prescription, up to a maximum of $250 per year.

A drug utilization review (a form of quality assurance which can improve prescribing and, therefore, the health of the public) must include information on four interrelated items: drug (therapy); patient (diagnosis); physician (prescriber); and pharmacy (dispensing record). Conducted appropriately, the Committee believes, systematic utilization review will also prevent waste and save money.

The Committee also recommends an adverse drug reporting program supported by the province. Such a program has been in operation since 1981, and is currently conducted by the Ontario Medical Association as a public service. However, economic constraints are now threatening the continuation of this program and the Inquiry believes that, because its preservation has merit, the province should take steps to ensure its survival.

The chapter also deals with the misuse and abuse of prescription medications. The Inquiry examines factors contributing to abuse, such as levels of use, consumer demand and social expectations, and the role of manufacturers and physicians. It also examines the illegal use of prescription drugs which, according to the RCMP, the OPP and the Metropolitan Toronto Police, is an increasing problem.

Vigorous public education programs involving schools, the media, our three levels of government, industry, labour and community groups are required in educating the public regarding the dangers of abusing and misusing drugs and it is recommended that the three levels of government should set up appropriate mechanisms to make drug abuse, including misuse of prescription drugs, as socially undesirable as smoking cigarettes has become.

On the assumption that prevention is better than treatment, the Inquiry recommends that prescriptions for hypnotics, sedatives and tranquilizers be for the shortest time possible and, where indicated, be clearly marked "no repeats." Research into the various approaches to reducing over-use of these substances should be undertaken.

Chapter X Alternative Therapies

While the Committee was not asked to look at alternatives to prescription drugs, a number of submissions called attention to this issue, and there is a large body of professional and lay literature related to the danger of the type of thinking which suggests a "pill for every ill."

While the report does not attempt a systematic examination of alternatives to prescription drugs, it concludes that such a study, conducted in accordance with accepted scientific standards, is merited. As an example of areas that merit more careful examination by both experts and policymakers, a brief look at the role of nutrition in health and illness is included.

The chapter does not contain any specific recommendations, but suggests the following:

- a critical review, sponsored by the Ministry of Health, of the extensive but largely anecdotal literature on nutritional pharmacology;
- increased support for departments of nutritional science in Ontario faculties of medicine and joint studies with appropriate clinical departments;
- a consensus conference of leading clinicians, nutritional scientists and physicians experienced in the use of nutritional treatments to explore the state of the art;
- examination of the implications for nutritional treatment in the recommendations of the Health Professions Legislation Review (Schwartz Report.)

Chapter XI Pharmacotherapy for the Elderly

The impaired organ systems of the elderly do not handle drugs as efficiently as those of younger people and medication in this group carries a risk because dosing regimens must be modified to take into account the absorbtion, distribution, metabolism, elimination and drug response characteristics of the elderly body.

The Ontario Drug Benefit formulary should list medications appropriate for the elderly and the Committee recommends that the DQTC review the availability of liquid formulations of such drugs as iron, acetaminophen and others where appropriate.

The present and soon-to-be older generations will, in all likelihood, continue to experience a significant amount of chronic disease that may be ameliorated by rational pharmacotherapy. A study commissioned by the Inquiry shows that 80 per cent of all adverse drug reactions (ADRs) are due to the extension of known pharmacologic properties and are potentially avoidable.

Major causes of ADRs, the study shows, are polypharmacy, self-medication, lack of compliance with instructions, improper storage, physicians' lack of training in geriatric prescribing, problems with supervision of elderly patients, dual prescribing systems in hospitals and in post-discharge care, and increased drug sensitivity in the elderly. To deal with this, the Committee has recommended that smart cards to be introduced to facilitate drug utilization, monitoring and review, be programmed to ensure that problems in pharmacotherapy are promptly identified and that the electronic communication system recommended for pharmacies should be programmed to take into account special problems in prescribing for the elderly.

There is also an important role for manufacturers in ensuring the safety of new drugs. Whenever it is feasible, data from drug trials submitted in support of applications for licensing and listing should include data from older individuals and, where it is relevant, manufacturers should provide data and recommendations for prescribing to older patients.

Faculties of medicine sponsoring drug trials should be asked to include older subjects.

As the elderly are especially prone to multiple illnesses, they are particularly liable to suffer adverse reactions due to drug interactions, particularly if multiple prescribers do not know about other drugs a patient is taking.

To deal with this, the Committee has recommended that: the elderly choose one personal primary care physician; specialists and hospital clinics inform the patient's attending physician of alterations in the patient's drug regimen; guidelines be established to ensure primary care physicians maintain and update seniors' medication lists; and physicians be encouraged to recommend that patients on complicated drug regimens bring all medications on each visit to a doctor or hospital.

To ensure that physicians and other health care providers are properly educated to provide care for the elderly, the Committee is requesting faculties of medicine to review curricula to ensure that appropriate instruction and experience are provided in prescribing for the elderly and that family medicine and specialty postgraduate training programs have specific rotations in geriatric medicine, including supervised pharmacotherapy experience. At the same time, the Ontario Medical Association, the Royal College of Physicians and Surgeons of Canada and the College of Family Practice are requested to review educational objectives and initiatives with regard to pharmacotherapy for the elderly.

The chapter concludes with a recommendation that all acute care hospitals and geriatric long-term facilities establish systems to monitor the pharmacotherapy of elderly patients.

Chapter XII—Conclusions and Recommendations

The final chapter concludes that Ontarians generally do receive excellent treatment involving prescription drugs and deals briefly with the problems that were identified. Recommendations are defined by category: those intended to improve the quality of treatment involving prescription drugs and those designed to improve access to needed drug treatment.

An examination of the cost implications of the various recommendations dealing with the Ontario Drug Benefit program reveals that, using mid-range estimates, the implementation of all recommendations would add about $95 million and save $195.3 million, for a net saving of about $100 million annually. This is equivalent to a 15 per cent reduction in the annual cost of the program.

Looking at the economic impact of other recommendations, the section concludes that changes to the Drug Quality and Therapeutics Committee and the education of pharmacists would add about $5.3 million per year.

It is impossible to estimate the cost implications associated with a number of other categories of recommendations.

The chapter concludes with a listing of all the recommendations contained in the report.

[Note : Dans ce texte, lorsqu'il désigne des personnes, le masculin est utilisé au sens neutre.]

Rapport administratif

Rapport du Comité d'enquête de l'Ontario sur les produits pharmaceutiques

Le Comité d'enquête de l'Ontario sur les produits pharmaceutiques a été institué pour examiner le rôle et l'influence du gouvernement de l'Ontario en matière de produits de prescription. Bien que sa création soit en partie attribuable aux inquiétudes quant à l'escalade rapide du coût des programmes gouvernementaux pour les médicaments—environ 20 p. 100 par an et 508 p. 100 au cours de la dernière décennie—le comité d'enquête n'a pas considéré le freinage des coûts comme sa tâche unique, ou même primordiale.

Le rapport renferme 147 recommandations. La plupart sont adressées au gouvernement de l'Ontario, qui a commandé l'enquête, mais certaines devront être examinées par les associations professionnelles, les organismes légaux qui réglementent les professions de la santé en Ontario, les cinq centres universitaires des sciences de la santé, les fabricants et distributeurs de produits pharmaceutiques, et la population.

Nous sommes convaincus que la mise en oeuvre de ces recommandations contribuera à la prestation d'un traitement accessible et de haute qualité aux Ontariens qui ont besoin de produits de prescription et aidera à éliminer les dépenses publiques inutiles.

Le comité a atteint plusieurs conclusions importantes :

A

Les Ontariens reçoivent généralement un excellent traitement en ce qui a trait aux produits de prescription. La plupart du temps, les produits pharmaceutiques sont sûrs et efficaces, et leur prescription, délivrance et usage sont appropriés. Les produits de prescription sont généralement disponibles promptement. Ils sont d'un prix abordable pour la plupart des Ontariens; environ 1,5 million de personnes (16 p. 100 de la population), y compris toutes les personnes âgées et les bénéficiaires de l'aide sociale, sont admissibles aux programmes pour les médicaments financés par le gouvernement. En outre, environ 6,7 millions de personnes (70 p. 100 de la population) ont accès à des régimes privés couvrant la majorité ou la totalité de leurs dépenses en médicaments; plusieurs autres citoyens ontariens paient leurs médicaments de leur poche.

Étant donné que les produits de prescription sont une composante importante des soins de santé actuels, le comité a trouvé ces conclusions rassurantes.

B

Toutefois, même les bons programmes peuvent être améliorés. Le comité a identifié un certain nombre de problèmes auxquels il faut faire attention et sur lesquels portent les recommandations. En voici quelques-uns :

- Certains produits pharmaceutiques inscrits au Formulaire du Programme de médicaments gratuits de l'Ontario (dont les coûts sont remboursés par les fonds publics) ne sont pas d'une efficacité optimale et/ou présentent un rapport bienfait/risque désavantageux.

- Certains médecins ne prescrivent pas les médicaments d'une manière utile ou efficace; les erreurs dans la prescription sont particulièrement inquiétantes dans le cas des personnes âgées. On se préoccupe notamment du fait que certains médecins prescrivent des médicaments puissants, alors que d'autres modalités thérapeutiques seraient plus sûres ou plus efficaces. Certains médecins prescrivent de façon impropre des produits nouveaux et coûteux, avant d'essayer des médicaments plus économiques et bien reconnus.

- Les médecins ne sont pas aussi bien préparés qu'ils le pourraient, du point de vue académique, à prescrire les milliers de produits pharmaceutiques disponibles, particulièrement en ce qui a trait aux personnes âgées. La formation continue des médecins concernant l'usage des nouveaux produits pharmaceutiques doit être améliorée.

- Les pharmaciens ne réalisent pas pleinement leur potentiel professionnel, en tant que participants à la prestation de soins de santé.

- Certains Ontariens qui ont besoin de produits de prescription n'y ont pas facilement accès; ils ne sont pas admissibles aux programmes gouvernementaux parce qu'ils ont moins de 65 ans et ne reçoivent pas d'aide sociale, ni ne peuvent s'assurer adéquatement dans le domaine privé. Les deux groupes les plus menacés sont les personnes qui n'ont pas d'assurance au travail et qui touchent de faibles salaires (les «travailleurs pauvres») et les personnes dont les frais en médicaments sortent de l'ordinaire, en raison de maladies chroniques graves ou d'invalidité. On estime que de 600 000 à 700 000 personnes appartiennent à l'un de ces groupes et n'ont pas adéquatement accès aux médicaments dont ils ont besoin.

C

Au Canada, les gouvernements doivent continuer à assumer la principale responsabilité dans le domaine des produits de prescription; en particulier ils doivent s'assurer que les médicaments sont sûrs, efficaces et abordables. La coordination entre les ministères fédéral et provinciaux n'a pas atteint des conditions optimales. Il n'existe pas de ligne de conduite nationale quant à l'interchangeabilité des médicaments; de plus, le processus d'approbation et d'autorisation des produits est plus complexe et lent que nécessaire.

Bien que les lignes de conduite du gouvernement provincial encouragent l'usage de produits pharmaceutiques «d'appellation commune», les frais en produits de prescription n'ont pas été bien maîtrisés.

Des recommandations ont été formulées pour trouver une solution à ces problèmes, ainsi qu'aux autres questions identifiées par le comité d'enquête.

Les lecteurs trouveront ci-après un résumé du rapport présenté chapitre par chapitre.

Chapitre I Introduction

Le comité d'enquête a reconnu qu'il était impossible d'examiner en profondeur le vaste mandat qu'on lui a confié dans le délai prescrit de 19 mois, lequel fut par la suite porté à 22 mois. Il a décidé de concentrer ses efforts sur les trois principaux objectifs de son mandat : améliorer la qualité de la pharmacothérapie en Ontario; assurer à tous les Ontariens un accès approprié aux médicaments nécessaires; et freiner la hausse des coûts des produits de prescription, qui ont subi une augmentation vertigineuse.

Au cours des travaux du comité d'enquête, nombre de groupes et de particuliers ont apporté des conseils, de l'aide et de l'information—parfois sans avoir été sollicités, mais le plus souvent dans le cadre d'audiences publiques ou en réponse directe à des demandes précises. Le comité d'enquête a également examiné les programmes gouvernementaux sur les médicaments, des études et des rapports antérieurs, ainsi que les lois pertinentes; il a aussi commandé des projets de recherche pour fournir de l'information complémentaire.

Quatre rapports intérimaires ont été remis à la ministre de la Santé; ils sont présentés intégralement en annexe. Les constatations et les recommandations qu'ils renferment sont présentées dans le contexte approprié dans le cadre du rapport.

Chapitre II Les objectifs du comité d'enquête

Le comité d'enquête tient pour acquis que les Ontariens devraient profiter d'un système leur assurant des thérapies médicamenteuses optimales qui soient appropriées, accessibles et abordables, et qui conservent nos ressources peu abondantes. Dans le domaine des soins de santé, le rôle joué par les produits de prescription varie en importance : rôle important dans le traitement des maladies et dans le soulagement des symptômes, et rôle secondaire dans la promotion de la santé, la prévention des maladies et la réhabilitation, ainsi que dans la lutte contre le stress. Les produits d'ordonnance n'ont aucun rôle à jouer dans les activités de loisir.

Le comité d'enquête a examiné le rôle approprié des gouvernements et conclu que, bien que les groupements professionnels et les consommateurs aient un rôle important à jouer concernant la prescription, la dispensation et l'utilisation des produits d'ordonnance, la responsabilité principale pour que les médicaments soient de bonne qualité, d'un accès approprié et d'un prix abordable, incombe au gouvernement, le ministère de la Santé de l'Ontario jouant un rôle de chef de file dans chacun de ces cas.

Chapitre III Programmes concernant les produits de prescription en Ontario

Le chapitre trois passe en revue l'historique des programmes concernant les produits de prescription en Ontario.

Le financement public des produits de prescription en Ontario découle de la Loi fédérale de 1958 sur l'assurance-hospitalisation et les services diagnostiques (l'Ontario y a adhéré en 1959). En vertu de ce programme, les produits d'ordonnance étaient au nombre des services médicaux assurés dispensés dans les hôpitaux. Au cours des années qui suivirent, certains programmes des gouvernements municipaux, provinciaux et fédéral offrirent divers soins de santé aux personnes ayant besoin de l'aide sociale; de même, les régimes privés d'assurance-maladie commencèrent également à contribuer aux frais des médicaments.

La Commission royale Hall de 1964 a posé les bases de la Loi canadienne sur la santé (1968), sur laquelle repose notre système de soins de santé.

La Commission Hall a recommandé que les produits de prescription pour les malades externes, ainsi que les produits administrés dans les hôpitaux, soient assurés au titre du régime public, et proposé le versement d'une contribution de 1 $ pour la plupart des ordonnances. Cependant, contrairement à cette recommandation, le programme national d'assurance-maladie établi en vertu de la Loi canadienne sur la santé ne couvrait pas les produits de prescription des malades externes.

Vers la fin des années 1960, le gouvernement provincial prit des mesures pour faciliter la prescription des produits pharmaceutiques d'appellation commune. C'est aussi pendant cette période que fut créé le Comité d'appréciation des médicaments et des thérapeutiques, un groupe consultatif au ministre de la Santé indépendant chargé d'assurer la qualité des produits pharmaceutiques en Ontario. L'Index comparatif des médicaments (ICM), qui est à l'origine du Formulaire du Programme de médicaments gratuits de l'Ontario, remonte également à cette période.

En 1974, le gouvernement provincial a introduit le Régime de médicaments gratuits de l'Ontario, qui visait initialement à fournir des médicaments gratuits aux personnes âgées admissibles aux prestations de supplément garanti du revenu et aux bénéficiaires des autres programmes d'aide sociale du gouvernement. Un an plus tard, le programme était offert à tous les citoyens ontariens de plus de 65 ans. Les prestations admissibles étaient inscrites dans le Formulaire qui, par la publication du montant remboursable par le gouvernement pour chaque produit pharmaceutique, fixait des limites de prix pour les médicaments de sources multiples. Le Comité d'appréciation des médicaments et des thérapeutiques faisait des recommandations quant aux médicaments à inscrire dans le Formulaire, s'assurait de la qualité des produits et déterminait leur interchangeabilité.

C'est à la fin de 1986 que sont entrées en vigueur les lois 54 et 55, respectivement la Loi sur les médicaments gratuits de l'Ontario et la Loi sur la réglementation des prix des produits de prescription. La loi 54 donnait au gouvernement le pouvoir de gérer effectivement le Régime de médicaments gratuits de l'Ontario, tandis que la loi 55 visait à fournir aux consommateurs l'information dont ils ont besoin pour être bien renseignés et réaliser des économies dans l'achat de médicaments.

Entre 1978 et 1988, le Régime de médicaments gratuits de l'Ontario a connu une augmentation annuelle moyenne de 20,4 p. 100, ce qui le classe parmi les programmes de soins de santé dont la croissance fut la plus rapide au cours de cette période. Au cours de l'exercice 1988-1989, le montant total versé pour ce programme s'est élevé à 637,9 millions de dollars.

Chapitre IV Le Formulaire et le Comité d'appréciation des médicaments et des thérapeutiques

Le comité d'enquête estime qu'un certain nombre de lacunes sont imputées au Formulaire, dans sa forme actuelle : il ne contient pas d'information quant aux doses courantes; il ne recommande aucune stratégie de traitement; il n'a pas la réputation d'être facile d'usage. Et, plus important encore, il n'est pas utilisé par les prescripteurs. Le comité a considéré deux options : éliminer ou modifier le Formulaire. En fin de compte, il a retenu cette dernière solution.

Pour effectuer les changements voulus, le comité a formulé des recommandations en vue de : la création d'un nouveau formulaire; une révision de tous les produits inscrits actuellement, en ce qui a trait à leur efficacité, leur sûreté, leur équivalence et leur coût; l'établissement de catégories pour les médicaments à usage général et à usage restreint; l'exemption de la demande du fabricant pour l'inscription des médicaments;

l'évaluation régulière des produits; la surveillance en vue d'accroître la responsabilité des prescripteurs; la possibilité d'accorder des remboursements sur les produits non-inscrits au Formulaire; des inscriptions pour les produits sous forme posologique non usuelle; des mécanismes en vue de promouvoir la prescription de médicaments d'appellation commune; et un système permanent pour l'évaluation des produits.

Le Comité d'appréciation des médicaments et des thérapeutiques décide des médicaments à inscrire au Formulaire, de la catégorie où ils seront placés et de l'interchangeabilité des produits. Il est composé de médecins, de pharmaciens et de scientifiques, qui s'appuient sur leur expertise reconnue pour conseiller la ministre; ils sont aidés par des experts-conseils indépendants qui leur fournissent des études et les avisent. Le comité d'enquête a reçu certains mémoires recommandant la dissolution du Comité d'appréciation des médicaments et des thérapeutiques, mais bien qu'il soit possible d'envisager certaines solutions de rechange, il n'existe aucune raison concluante de procéder à un tel changement. Le comité recommande toutefois : d'élargir son mandat en vue de permettre une évaluation plus efficace des facteurs de coût et des effets des modifications apportées au Formulaire; et d'intensifier la communication entre les professionnels de la santé et le Comité d'appréciation des médicaments et des thérapeutiques.

En ce qui a trait aux produits sous «autorisation spéciale» (AS)—médicaments non-inscrits au Formulaire ordinaire mais jugés nécessaires à la santé dans des cas particuliers—le comité a recommandé dans son rapport intérimaire de décembre 1988 que le programme d'AS soit discontinué et que tous les médicaments autorisés dans le cadre du Programme de médicaments gratuits de l'Ontario soient approuvés par le Comité d'appréciation des médicaments et des thérapeutiques. Au nombre des autres recommandations dans ce domaine, le comité d'enquête préconise également que le Formulaire renferme les catégories usage limité et usage ordinaire, et que le Comité d'appréciation des médicaments et des thérapeutiques crée un mécanisme lui permettant d'étudier rapidement les produits qui représentent des progrès thérapeutiques majeurs.

À propos de l'interchangeabilité des médicaments, le comité recommande de continuer à respecter la ligne de conduite actuelle encourageant la substitution par des produits d'appellation commune; les pharmaciens devraient continuer d'être remboursés seulement au prix du produit pharmaceutique équivalent le moins coûteux et devraient renouveler les ordonnances avec les produits dispensés initialement, lorsque les prix sont équivalents; ils devraient être remboursés pour une ordonnance «sans substitution» mettant en cause un produit plus coûteux, seulement lorsqu'il y a une raison approuvée de la faire; le patient devrait avoir la possibilité de payer la différence de prix dans le cas des ordonnances «sans substitution»; des dispositions spéciales devraient être prises si le patient ne peut tolérer le produit moins coûteux; le pharmacien devrait aviser le patient et le prescripteur lorsqu'un produit a été remplacé; et les fabricants devraient diffuser l'information nécessaire lorsqu'un nouveau produit d'appellation commune entre en usage général.

4.1 Par conséquent, le comité recommande que le Formulaire du Programme de médicaments gratuits de l'Ontario soit conservé, mais qu'il soit modifié en profondeur.

4.2 Par conséquent, le comité recommande qu'après la publication de l'édition de janvier 1991, le Formulaire soit gelé pour permettre la création d'un formulaire nouveau et allégé. Les avantages cités dans

l'édition de janvier 1991 seraient offerts seulement jusqu'à la publication du formulaire allégé; à ce moment, tous les avantages en vigueur prendraient fin et seraient remplacés par les dispositions du nouveau formulaire.

4.3 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques entreprenne immédiatement une révision de tous les produits inscrits actuellement dans le Formulaire, en ce qui a trait à leur efficacité, leur sûreté, leur équivalence et leur coût.

4.4 Par conséquent, le comité recommande la mise au point de mécanismes permettant l'inscription de produits pharmaceutiques sous la recommandation du Comité d'appréciation des médicaments et des thérapeutiques, même lorsqu'aucune demande n'a été présentée par le fabricant.

4.5 Le comité recommande en outre que des dispositions soient prises pour donner au Formulaire un caractère dynamique; les produits provenant de sources multiples et les produits provenant d'une seule source seraient réexaminés régulièrement, pour être conservés, éliminés ou changés de catégorie.

4.6 Par conséquent, le comité recommande que le ministère de la Santé, en collaboration avec le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes d'Ontario, l'Association des médecins de l'Ontario, l'Ordre des pharmaciens de l'Ontario et l'Ontario Pharmacists' Association, lance d'ici le 1er janvier 1992 un programme destiné à surveiller l'utilisation médicamenteuse et accroître la responsabilité des prescripteurs à l'égard de leur pharmacothérapie.

4.7 Par conséquent, le comité recommande que le développement et l'utilisation de produits de sources multiples sous des formes posologiques non usuelles soient encouragés lorsque cela est possible, en assemblant et en promulguant des critères permettant l'identification et l'inscription de produits interchangeables sous des formes posologiques ou d'administration non usuelles.

4.8 Par conséquent, le comité recommande que le ministère de la Santé, le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes d'Ontario, l'Association des médecins de l'Ontario et le Council of Faculties of Medicine collaborent à la mise au point de mécanismes en vue de promouvoir la prescription de médicaments d'appellation commune, lorsque cela est pertinent.

4.9 Par conséquent, le comité recommande qu'après l'édition de janvier 1991, le ministère discontinue le système actuel de publication du Formulaire, en vertu duquel des échéances semestrielles sont établies, et mette au point pour le remplacer un système permanent de révision des produits.

4.10 Par conséquent, le comité recommande que l'on retienne les services d'un comité consultatif spécialiste en matière de produits, tel que représenté par le Comité d'appréciation des médicaments et des thérapeutiques actuel, avec des attributions semblables à celles déjà établies, compte tenu des modifications proposées à la recommandation 4.11.

4.11 Par conséquent, le comité recommande que le mandat du Comité d'appréciation des médicaments et des thérapeutiques soit révisé d'ici le 1er janvier 1991 et que les points suivants soient examinés

a) Un mandat élargi permettant une évaluation plus efficace des facteurs de coût des produits pharmaceutiques; et

b) Un mandat élargi, accompagné des ressources appropriées, permettant de surveiller les effets des modifications apportées au Formulaire.

4.12 Par conséquent, le comité recommande que le Ministère et le Comité d'appréciation des médicaments et des thérapeutiques jouent un rôle plus actif en communiquant régulièrement avec les professionnels de la santé pour souligner les avantages du Formulaire et le processus de révision.

4.13 Que le programme d'autorisation spéciale soit discontinué sous sa forme actuelle.

4.14 Que tous les produits pharmaceutiques devant être autorisés aux fins de paiement en vertu du Programme de médicaments gratuits de l'Ontario soient approuvés par le Comité d'appréciation des médicaments et des thérapeutiques. (Voir la recommandation 4.20 sur la période de transition.)

4.15 Que tous les produits pharmaceutiques approuvés aux fins de paiement par le ministère de la Santé soient inscrits dans le Formulaire et que soient précisées les conditions, le cas échéant, auxquelles ils peuvent être couverts en vertu du Programme de médicaments gratuits de l'Ontario.

4.16 Que le Comité d'appréciation des médicaments et des thérapeutiques révise complètement tous les produits pharmaceutiques pour lesquels des autorisations spéciales ont été délivrées. Nous recommandons en outre que ceci soit effectué par ordre de fréquence d'usage (en commençant par le produit le plus couramment utilisé), selon les critères d'inscription au Formulaire. Tous les médicaments approuvés par le Comité d'appréciation des médicaments et des *thérapeutiques après cette révision* devraient être inscrits dans le Formulaire. Les médicaments qui ne reçoivent pas l'approbation du comité ne devraient pas être inscrits dans le Formulaire, ni être admissibles aux fins de paiement par le ministère de la Santé.

4.17 Que le Formulaire renferme deux catégories de médicaments : *usage ordinaire* et *usage limité*. Le coût des médicaments d'*usage ordinaire* devrait être remboursé chaque fois qu'ils sont prescrits et dispensés aux personnes admissibles aux programmes de médicaments gratuits de l'Ontario.

L'appellation *usage limité* pourra être accordée aux autres produits pharmaceutiques qui pourront seulement être remboursés à des conditions déterminées par le Comité d'appréciation des médicaments et des thérapeutiques et énoncées dans le Formulaire du Programme de médicaments gratuits de l'Ontario. Par exemple, l'appellation *usage limité* peut être accordée lorsqu'au moins une des conditions suivantes est remplie

a) lorsque les conditions thérapeutiques limitées, déterminées par le Comité d'appréciation des médicaments et des thérapeutiques et énoncées dans le Formulaire du Programme de médicaments gratuits de l'Ontario, ont été remplies;

b) lorsque les médicaments d'*usage ordinaire* ont été essayés et se sont révélés inefficaces ou ont causé des effets indésirables chez un patient particulier; et

c) lorsque des médicaments d'*usage ordinaire* de rechange sont contre-indiqués, en raison d'une thérapie coexistante ou de particularités chez un patient.

Le prescripteur aurait la responsabilité professionnelle de s'assurer que la (les) condition(s) a (ont) été remplie(s).

4.18 Que les conditions et restrictions, le cas échéant, sous lesquelles les médicaments seront autorisés aux fins de remboursement soient clairement indiquées. Ceci peut être fait par des notes en bas de page ou d'autres indications dans le Formulaire.

4.19 Que tous les produits pharmaceutiques pour lesquels des autorisations spéciales ont été délivrées dans le passé, après avoir été revus par le Comité d'appréciation des médicaments et des thérapeutiques, se retrouvent dans seulement une des catégories suivantes

a) Inscription dans le Formulaire avec l'appellation *usage ordinaire;*

b) Inscription dans le Formulaire avec l'appellation *usage limité;* et

c) inadmissibilité à un remboursement par le gouvernement de l'Ontario.

4.20 Que pendant la période de transition, jusqu'à ce que le Comité d'appréciation des médicaments et des thérapeutiques ait pu réviser les médicaments pour lesquels des autorisations spéciales ont été délivrées, tous les médicaments sous autorisation spéciale en instance de révision puissent conserver leur autorisation spéciale. On devrait toutefois imposer un strict moratoire sur l'attribution de l'appellation autorisation spéciale à de nouveaux produits.

4.21 Que le Comité d'appréciation des médicaments et des thérapeutiques crée un mécanisme lui permettant d'étudier rapidement les nouveaux produits présentant des progrès thérapeutiques majeurs.

4.22 Par conséquent, le comité recommande que, bien que la ligne de conduite actuelle de l'Ontario sur l'interchangeabilité des médicaments, qui encourage la substitution par des produits d'appellation commune et la compétitivité en matière de prix, soit maintenue.

a) L'Ordre des pharmaciens d'Ontario demande aux pharmaciens de renouveler les ordonnances avec les produits dispensés initialement lorsque leur prix est équivalent à celui de produits concurrentiels. (Il est entendu que, lorsqu'il existe une différence substantielle de prix, les pharmaciens dispenseront le produit pharmaceutique à un prix correspondant au niveau auquel ils seront remboursés.)

b) Les ordonnances «sans substitution» ne soient plus admises au titre du Programme de médicaments gratuits de l'Ontario; lorsque le patient demande que le produit spécifiquement prescrit soit dispensé, il devrait combler l'écart de prix par rapport au produit le moins coûteux pour lequel le pharmacien sera remboursé.

c) Le ministère de la Santé, sur l'avis du Comité d'appréciation des médicaments et des thérapeutiques, établisse un mécanisme par lequel un médecin peut demander qu'un produit particulier soit admis à titre de bénéfice (le coût du produit serait entièrement remboursable au pharmacien) dans les très rares cas où un patient ne peut tolérer le produit le moins cher ou en bénéficier.

d) Les lignes de conduite et, au besoin, la législation soient modifiées afin d'exiger que les pharmaciens informent les patients et les prescripteurs de la substitution d'un produit.

e) Lorsqu'une nouvelle préparation d'appellation commune entre en usage général, le ministère de la Santé exige que le fabricant du produit d'appellation commune diffuse l'information nécessaire aux prescripteurs, tout comme le font maintenant les fabricants de produits novateurs.

4.23 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques soit habilité à examiner les demandes et à faire des recommandations au ministre de la Santé concernant l'interchangeabilité des produits pharmaceutiques, indépendamment de la situation des produits au titre du Programme de médicaments gratuits de l'Ontario. Si l'on juge nécessaire de changer la législation ou les règlements pour que cela soit possible, le changement approprié devrait être institué.

Chapitre V L'acquisition des médicaments

L'industrie pharmaceutique se divise en deux grands groupes : les fabricants de produits novateurs et les fabricants de produits d'appellation commune. Au Canada, le segment des produits novateurs, ou marques commerciales, relève essentiellement des multinationales, par l'entremise principalement de leurs filiales de fabrication et de distribution. La croissance du segment des produits d'appellation commune, qui est constitué principalement de fabricants canadiens, est attribuable à la loi rendant obligatoire la détention de permis. Dans l'ensemble, cette industrie très rentable croît plus rapidement au Canada qu'à l'échelle mondiale.

Dans le cadre du Formulaire, la province établit le meilleur prix disponible (MPD), c'est-à-dire le prix le plus bas auquel le produit est disponible au Canada, aux fins de vente en Ontario. Pour être légalement commercialisé au Canada, un médicament doit être approuvé aux fins de vente par la Direction générale de la protection de la santé du gouvernement fédéral; ce processus d'approbation est parfois très lent. Par l'entremise du Comité d'appréciation des médicaments et des thérapeutiques, le gouvernement ontarien détermine si deux marques ou plus sont bioéquivalentes et assume la responsabilité légale afin de permettre aux pharmaciens de dispenser la marque équivalente la moins coûteuse. Pour simplifier ce processus, le comité d'enquête recommande que l'Ontario prenne l'initiative dans la promotion d'une politique d'interchangeabilité à l'échelle du pays.

Le comité recommande également : l'établissement d'un plafond quant au prix d'introduction des nouveaux produits d'appellation commune; le maintien du concept du MPD; une formule pour rétrograder les prix des médicaments et empêcher les augmentations de dépasser l'IPC; une limite des futures augmentations de prix; un mécanisme de vérification permettant d'ajuster rétroactivement les sommes remboursées à certains pharmaciens; et l'exigence que les pharmaciens rapportent toutes les ordonnances non couvertes dans le cadre du Programme de médicaments gratuits de l'Ontario.

Ce chapitre porte également sur les programmes d'achat des hôpitaux. Il y est proposé d'approuver et d'appuyer le concept d'un formulaire réduit pour les petits hôpitaux, les maisons de soins infirmiers et les foyers pour personnes âgées, ainsi que pour les centres de médecine communautaire.

5.1 Par conséquent, le comité recommande que le gouvernement de l'Ontario prenne l'initiative de promouvoir des ententes fédérale-provinciales et interprovinciales en vue d'une ligne de conduite sur l'interchangeabilité à l'échelle du pays. Santé et Bien-être social Canada devrait se voir confier un mandat plus vaste : en plus de confirmer la sûreté et l'efficacité des produits pharmaceutiques, le processus d'approbation devrait également déterminer si le produit est bioéquivalent à d'autres produits approuvés et s'il est interchangeable avec eux.

5.2 Par conséquent, le comité recommande que l'équivalent sous appellation commune d'un produit de marque commerciale ne soit pas inscrit dans le formulaire pour la première fois à un prix supérieur à 60 p. 100 du prix de référence du produit de marque commerciale équivalent. Ce prix de référence sera le prix inscrit du produit de marque commerciale rencontré dans le formulaire antérieur à celui où le produit d'appellation commune est censé être inclus pour la première fois.

5.3 Par conséquent, le comité recommande que toutes les ordonnances pour des produits de sources multiples à l'intention de prestataires admissibles, indépendamment de leur désignation de produit «sans substitution» par le prescripteur, soient ordinairement remboursés uniquement au "meilleur prix disponible" le plus bas pour le produit. Si le pharmacien, à la demande du patient, dispense un produit dont le prix inscrit dépasse le MPD, le patient devra payer la différence au pharmacien. Le pharmacien peut être remboursé pour une ordonnance «sans substitution» mettant en cause un produit plus coûteux, seulement si le prescripteur a une raison approuvée d'avoir prescrit le produit. (Voir la recommandation 4.21)

5.4 Par conséquent, le comité recommande que le concept du meilleur prix disponible soit conservé, de préférence à d'autres formes de définition du prix de remboursement aux pharmaciens.

5.5 Par conséquent, le comité recommande que le prix de remboursement de tous les médicaments dans le formulaire de janvier 1991 soit ramené aux prix inscrits dans le formulaire de décembre 1986, plus les augmentations de l'indice des prix à la consommation de décembre 1986 à janvier 1991. Si le produit n'était pas inscrit dans le formulaire de décembre 1986, son prix de janvier 1991 devrait être ramené au prix auquel il a été inscrit pour la première fois après décembre 1986, puis augmenté d'un montant ne pouvant pas dépasser l'augmentation de l'IPC entre cette date et janvier 1991. Si le prix ajusté en fonction de l'IPC est supérieur au prix actuel, le prix actuel devrait être maintenu.

5.6 Par conséquent, le comité recommande que, pour la période commençant avec le Formulaire suivant le formulaire de janvier 1991 et se terminant en janvier 1994, l'augmentation des prix des médicaments inscrits aux fins de remboursement ne dépasse pas 50 p. 100 de l'indice des prix à la consommation.

5.7 Par conséquent, le comité recommande que la législation actuelle soit amendée, avec des sanctions appropriées, pour renforcer le concept du meilleur prix disponible, de sorte qu'on exige des fabricants qu'ils signent une entente irrévocable les obligeant à offrir le format du produit à partir duquel le MPD a été établi, au prix inscrit, à toutes les pharmacies et à tous les grossistes, pendant la durée du Formulaire pertinent.

5.8 Le comité recommande en outre que le ministère de la Santé poursuive énergiquement les allégations de transactions ou de primes offertes par le fabricant, afin de réduire immédiatement le MPD en conséquence, si les allégations sont vraies.

5.9 Le comité recommande également que la législation soit amendée afin d'empêcher les pharmaciens de demander un remboursement (pour la portion du prix de l'ordonnance représentant le coût) en vertu du Programme de médicaments gratuits de l'Ontario, à un niveau supérieur au prix réellement payé pour le produit.

5.10 Le comité recommande en outre que la législation soit amendée de manière à exiger que les pharmaciens, lorsqu'ils

dispensent des ordonnances pour des produits interchangeables dans les cas de non-admissibilité au Programme de médicaments gratuits de l'Ontario, réclament pour la portion du prix de l'ordonnance représentant le coût du montant qu'ils ont payé réellement pour le produit, si celui-ci était inférieur au meilleur prix disponible.

Chapitre VI La distribution des médicaments

La distribution des médicaments en Ontario est l'objet de certains problèmes importants qui ont trait à la modification des rapports entre les pharmacies de détail et les grossistes. Ce changement est attribuable à

- l'achat direct de groupe par les grandes chaînes de pharmacies et les pharmacies franchisées;
- la concurrence croissante des produits d'appellation commune; et
- un supplément du grossiste, qui ne peut être recouvré par le pharmacien et qui favorise ceux qui achètent directement du fabricant.

Dans son examen de ces problèmes, le comité a jugé que certains principes devaient être protégés : les médicaments doivent être rapidement disponibles pour tous ceux qui en ont besoin, quel que soit leur emplacement géographique; la distribution de devrait pas être productrice de revenus pour les pharmaciens; les recommandations ne devraient pas nécessiter de fonds publics additionnels; les recommandations ne devraient pas se traduire par des «bénéfices sur la distribution» inattendus, pour les fabricants; et les frais de distribution devraient être payés par ceux qui les engagent.

Le comité a examiné diverses possibilités et sollicité les commentaires de parties intéressées. Après avoir présenté un certain nombre de propositions dans son troisième rapport trimestriel, le comité a tenu une journée d'audiences publiques pour mieux mettre en lumière la situation. Avec une meilleure vue d'ensemble, le comité a pu mettre de l'avant des recommandations en fonction des principes exposés plus haut.

Elles comprennent : l'établissement de normes minimums pour les grossistes afin de répondre au besoin d'une distribution rapide, à l'échelle de la province; permettre aux grossistes de conclure des ententes de distributeur-agent avec les fabricants; réduire le pourcentage ajouté au MPD afin de tenir compte du montant réel que doit payer le pharmacien au grossiste et éliminer le supplément ajouté au MPD pour les ventes directes; empêcher toute augmentation du MPD lorsqu'un fabricant de médicaments passe des ventes indirectes aux ventes directes; et renégocier la structure des honoraires selon laquelle les pharmaciens sont remboursés, pour refléter la diminution du supplément et l'élargissement du rôle professionnel du pharmacien.

On a également examiné dans ce chapitre les problèmes touchant l'Approvisionnement médico-pharmaceutique du gouvernement de l'Ontario (AMPGO) et recommandé : que les hôpitaux psychiatriques soient autorisés à utiliser le plan d'achat de groupe de l'Ontario Hospital Association; que le ministère de la Santé se départisse des fonctions d'acquisition, d'entreposage et de distribution, qu'il remplit par l'entremise de l'AMPGO ou sa Direction de l'approvisionnement et des services, et qu'il confie ces fonctions au secteur privé; et que le ministère de la Santé vérifie les services de l'AMPGO afin de mettre au point des solutions de rechange efficaces aux services offerts actuellement aux établissements de soins de longue durée.

La partie traitant de la distribution des médicaments se termine par un examen du système de dose unitaire en vigueur dans les

hôpitaux et la recommandation selon laquelle le programme pour la dose unitaire/mixtion intraveineuse soit adopté comme système de prédilection pour la délivrance de médicaments dans les hôpitaux d'une certaine grosseur et selon laquelle les hôpitaux reçoivent des subventions pour se convertir au système de dose unitaire.

6.1 Par conséquent, le comité recommande l'établissement de normes minimums pour les services fournis par les grossistes, afin que leurs frais soient admissibles à des remboursements, comme le précise la recommandation 6.2 ci-dessous. Ces normes devraient comprendre la disponibilité ainsi que la distribution rapide et à l'échelle de la province de la plupart des produits de prescription.

6.2 Par conséquent, le comité recommande que, tout de suite après avoir considéré ces recommandations, le ministère de la Santé permette aux grossistes de conclure des ententes de distributeur-agent avec les fabricants.

6.3 Le comité recommande en outre que, pour coïncider avec la date d'entrée en vigueur des honoraires des pharmaciens, qui font actuellement l'objet de nouvelles négociations, le ministère de la Santé prenne des mesures appropriées pour ramener le pourcentage ajouté au meilleur prix disponible à un niveau destiné à dédommager le pharmacien du montant réel qu'il doit payer au grossiste, et pour éliminer complètement le supplément ajouté au MPD pour les ventes directes.

6.4 Par conséquent, le comité recommande que le ministère de la Santé prenne les mesures appropriées pour empêcher toute augmentation du meilleur prix disponible lorsqu'un fabricant de médicaments passe des ventes indirectes aux ventes directes.

6.5 Par conséquent, le comité recommande que dans le cadre de la négociation actuelle sur les honoraires de dispensation, le ministère de la Santé renégocie la structure des honoraires selon laquelle les pharmaciens sont remboursés, pour refléter la diminution du supplément et l'élargissement du rôle professionnel du pharmacien.

6.6 Par conséquent, le comité recommande que, d'ici la fin de 1992, les hôpitaux psychiatriques soient autorisés à utiliser le plan d'achat de groupe de l'Ontario Hospital Association.

6.7 Par conséquent, le comité recommande qu'on retienne les services d'un groupe d'experts-conseils indépendants pour effectuer une vaste vérification de l'organisation et de l'exploitation des services fournis par la Pharmacie du gouvernement, expressément dans le but de :

a) étudier la possibilité que le ministère de la Santé se départisse des fonctions d'acquisition, d'entreposage et de distribution des produits pharmaceutiques, qui sont remplies actuellement par la Pharmacie du gouvernement ou par la Direction de l'approvisionnement et des services, de sorte que ces fonctions soient exécutées par des services du secteur privé, qui existent actuellement ou qui pourront être mis sur pied; ou

b) étudier la possibilité d'améliorer l'efficacité de fonctionnement du système actuel;

c) développer, avec la participation des groupements intéressés, des solutions de rechange plus efficaces aux services offerts actuellement aux établissements de soins de longue durée; et

d) étudier la création d'un conseil d'administration indépendant provenant du secteur privé pour en surveiller l'exploitation, si on décide de la conserver, sous une forme ou une autre.

6.8 Par conséquent, le comité recommande que les programmes pour la dose unitaire/ mixtion intraveineuse soient adoptés comme système de prédilection pour la délivrance de médicaments dans les hôpitaux d'une certaine grosseur.

6.9 Par conséquent, le comité recommande en outre que, d'ici 1991, le ministère de la Santé de l'Ontario et l'Ontario Hospital Association déterminent la grosseur et les autres conditions pertinentes, et que les hôpitaux identifiés reçoivent des subventions pour se convertir au système de dose unitaire.

Chapitre VII La prescription des médicaments

Le rôle du médecin dans la prescription d'un médicament est examiné des points de vue tant théorique que pratique. Le septième chapitre traite de la prescription des médicaments, du rôle clé joué par les médecins en tant que prescripteurs, de l'éducation des médecins dans ce rôle et des moyens par lesquels la prescription des médicaments pourrait être améliorée.

On passe en revue des modèles d'information illustrant les facteurs qui influent sur les décisions des médecins et l'on recommande que toutes les parties intéressées à l'usage des produits de prescription en Ontario aient comme objectif une pharmacothérapie judicieuse. Le comité préconise également d'examiner la possibilité de mettre sur pied un centre ontarien pour l'étude et l'amélioration de la prescription des médicaments, dont le financement serait partagé par l'industrie et le ministère de la Santé.

Des discussions sur le consentement éclairé au traitement et sur le rôle du médecin, en tant que défenseur du patient ou gardien de la société, sont à l'origine de la recommandation selon laquelle les prescripteurs soient responsables à l'égard de leurs patients, tandis que la profession médicale devrait jouer un rôle dans la protection des ressources de la société.

On se penche sur la question de l'éducation des médecins en ce qui a trait à la thérapeutique – dans les études de premier cycle et de deuxième et troisième cycles ainsi que dans l'éducation permanente des médecins. Le comité d'enquête conclut que les stratégies de prescription ne sont pas traitées adéquatement dans les cours de base en pharmacologie médicale et que la formation dans la façon de prescrire dépend d'une variété d'expériences, au moment de l'apprentissage. Pour combler cette lacune, le comité d'enquête recommande que des mesures soient prises dans toutes les écoles de médecine de l'Ontario : modifier les programmes pour mettre l'accent sur la bonne façon de prescrire; intégrer les sciences de base et les sciences cliniques, en particulier la pharmacologie et la pharmacothérapie; reconnaître les différences dans le type de morbidité rencontré dans les hôpitaux d'enseignement et dans les centres de médecine communautaire; accorder une plus grande importance à l'évaluation critique des produits pharmaceutiques et aux besoins en pharmacothérapie des personnes âgées en matière de traitement.

Au niveau des deuxième et troisième cycles, les mesures recommandées concernent : l'examen régulier des aspects pharmacologiques de la thérapie; une meilleure intégration de la pharmacologie clinique dans tous les services, y compris les blocs de chirurgie; l'amélioration des méthodes de vérification quant à l'utilisation des produits de prescription; et une expérience particulière en gériatrie, au moment de l'internat et de la résidence.

Afin que les pourvoyeurs de soins aient continuellement accès à de l'information susceptible de promouvoir la façon judicieuse

de prescrire, le comité recommande : des programmes efficaces en formation médicale permanente; des études d'observation post-marketing innovatrices impliquant un grand nombre de médecins de famille; et le développement de programmes pilotes permettant d'étudier l'utilisation des médicaments.

Après avoir analysé ce que pensent les médecins de leur éducation en tant que préparation à la prescription de médicaments, ainsi que les rôles joués par le gouvernement et les associations médicales, le comité recommande que la profession médicale développe des règles de conduite en matière de prescription.

Le comité a formulé également les recommandations suivantes : une publication mise à jour régulièrement qui renfermerait des règles de conduite pour la prescription basées sur des renseignements objectifs quant aux produits pharmaceutiques de prédilection; restreindre l'usage des médicaments particulièrement coûteux lorsque des produits de rechange plus économiques sont disponibles; poursuivre le développement et l'usage de formulaires limités pour les hôpitaux; la prolongation de la méthode du formulaire limité pour les cliniques de groupe et autres établissements de soins de santé; l'utilisation des noms d'appellation commune dans la rédaction des ordonnances et l'étiquetage des médicaments; et la promotion de révisions régulières et cohérentes des pharmacothérapies. En ce qui concerne les rapports entre les fabricants et les médecins, le comité recommande la mise sur pied de projets pilotes pour mettre à l'épreuve des façon impartiales et non axées sur la marque de commerce de faire des présentations sur les produits, et le développement de règles d'éthique pour guider les rapports entre les médecins et l'industrie. Le chapitre se termine sur une discussion et des recommandations ayant trait à : la mise sur pied d'un département de pharmacologie clinique dans chaque école de médecine en Ontario; des mécanismes destinés à renforcer les liens entre les médecins et les pharmaciens; la création d'un service d'information sur les médicaments chargé de faire l'évaluation des médicaments très coûteux; et une révision des produits grand public inscrits dans le Formulaire, afin de les classer parmi les médicaments à usage restreint ou à usage général.

7.1 Par conséquent, le comité recommande qu'en tant que partie intégrante d'une thérapie optimale, la pharmacothérapie judicieuse devrait être l'objectif de toutes les parties s'intéressant à l'usage des produits de prescription en Ontario.

7.2 Par conséquent, le comité recommande que le ministère de la Santé invite l'industrie pharmaceutique à examiner conjointement la possibilité de partager le financement d'un centre ontarien pour l'étude de la prescription médicamenteuse. Il serait rattaché à un centre des sciences de la santé et aurait des liens avec des médecins praticiens, par l'entremise du Collège royal des médecins et chirurgiens du Canada, du Collège des médecins de famille du Canada et de l'Association des médecins de l'Ontario, ainsi qu'avec les départements de pharmacologie clinique qui, selon nous, devraient être créés dans chacune des facultés de médecine en Ontario. (Voir la recommandation 7.17.)

7.3 Par conséquent, le comité recommande au College of Physicians and Surgeons of Ontario et à l'Association des médecins de l'Ontario d'encourager les prescripteurs à se faire les défenseurs de leurs patients et à être responsables devant eux. D'autre part, la profession médicale a un rôle à jouer dans la protection des ressources de la société.

7.4 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario et le College of Physicians and Surgeons of Ontario, avec la participation de l'Ontario Pharmacists' Association et de l'Ordre des

pharmaciens de l'Ontario, étudient conjointement à quel point la quantité de médicaments prescrits dans une ordonnance est pertinente et émettent des lignes de conduite appropriées.

7.5 Par conséquent, le comité recommande au Council of Ontario Faculties of Medicine d'encourager chacune des écoles de médecine de l'Ontario à prendre les mesures suivantes en matière d'enseignement :

a) Des études pilotes pour déterminer l'efficacité des modifications apportées dans les programmes d'enseignement de premier cycle et de deuxième et troisième cycles mettant l'accent sur l'acquisition et le maintien de bonnes habitudes de prescription médicamenteuse;

b) Une meilleure intégration des sciences de base et des sciences cliniques, en particulier l'intégration de la pharmacothérapie à la pharmacologie;

c) Une meilleure reconnaissance par les départements de spécialités cliniques des différences quant aux modèles et aux types de morbidité rencontrés dans les hôpitaux d'enseignement et dans les centres de médecine communautaire;

d) Une plus grande importance de l'évaluation critique des produits pharmaceutiques dans les programmes d'enseignement de la médecine; et

e) Une plus grande importance des besoins particuliers des personnes âgées en matière de traitement de problèmes médicaux.(Voir aussi le chapitre 11)

7.6 Par conséquent, le comité recommande que les mesures en matière d'enseignement médical de deuxième et troisième cycle comprennent :

a) L'examen régulier des aspects pharmacologiques de la thérapie;

b) Une meilleure intégration de la pharmacologie clinique dans tous les services, y compris les blocs de chirurgie;

c) L'amélioration des méthodes de vérification quant à l'utilisation des produits de prescription; (Voir également la révision sur l'utilisation médicamenteuse); et

d) Une expérience particulière en gériatrie, au moment de l'internat ou de la résidence.

7.7 Par conséquent, le comité recommande que:

a) Le Council of Ontario Faculties of Medicine, l'Association des médecins de l'Ontario et le College of Physicians and Surgeons of Ontario soient invités, d'ici 1991, à développer des programmes en formation médicale permanente qui soient nouveaux, innovateurs et efficaces, afin d'encourager la participation d'un plus grand nombre de médecins; et

b) Le Council of Ontario Faculties of Medicine, conjointement avec le Comité d'appréciation des médicaments et des thérapeutiques, l'Association canadienne de l'industrie du médicament, l'Association des fabricants de produits pharmaceutiques, Santé et Bien-être social Canada, l'Association pharmaceutique canadienne, et le ministère de la Santé de l'Ontario soient invités à développer, d'ici 1993, des études d'observation post-marketing innovatrices sur une diversité de préparations pharmaceutiques, tant des produits de marques de commerce que des produits d'appellation commune, et impliquant un grand nombre de médecins de famille.

7.8 Par conséquent, le comité recommande que la profession médicale développe, par l'entremise de ses nombreuses organisations, des règles de conduite pertinentes en matière de traitement.

7.9 Par conséquent, le comité recommande la publication du répertoire intitulé «Choice of Medications - 1990» et que celui-ci soit mis à la disposition, chaque année, de tous les médecins agréés et à toutes les pharmacies en Ontario. Cette publication devrait contenir des directives pour la prescription basées sur des renseignements objectifs concernant les produits pharmaceutiques préférés, y compris leurs indications, contre-indications, effets secondaires, la posologie recommandée et les coûts relatifs.

7.10 Par conséquent, le comité recommande que le ministère de la Santé continue d'être guidé par le Comité d'appréciation des médicaments et des thérapeutiques dans le développement du concept d'usage limité dans le Formulaire du Programme de médicaments gratuits de l'Ontario. (Voir aussi les recommandations 4.2 et 4.3.)

7.11 Par conséquent, le comité recomande que l'Ontario Hospital Association soit invitée à encourager le développement et l'usage de formulaires limités dans les hôpitaux.

7.12 Par conséquent, le comité recommande que le ministère de la Santé, l'Association des médecins de l'Ontario et l'Ontario Pharmacists' Association encouragent la prolongation de la méthode de formulaires limités pour les cliniques de groupe, les maisons de soins infirmiers, les foyers pour personnes âgées, les organisations de maintien de la santé et les organisations de médecine globale.

7.13 Par conséquent, le comité recommande qu'en Ontario, l'usage des noms d'appellation commune des produits pharmaceutiques soit encouragé dans la rédaction des ordonnances et l'étiquetage des médicaments, sauf lorsqu'il existe une raison spéciale d'utiliser un nom de marque de commerce.

7.14 Par conséquent, le comité recommande que le Council of Ontario Faculties of Medicine, le College of Physicians and Surgeons of Ontario et l'Association des médecins de l'Ontario soient invités à faire la promotion de révisions régulières, pertinentes et cohérentes aux pharmacothérapies.

7.15 Par conséquent, le comité recommande que, d'ici 1992, le ministère de la Santé mette sur pied des projets pilotes pour mettre à l'épreuve des façons impartiales de faire des présentations sur les produits en Ontario, d'après le modèle de Harvard. Ceci devrait être précédé par des consultations avec l'Ordre des pharmaciens de l'Ontario, l'Ontario Pharmacists' Association, le College of Physicians and Surgeons of Ontario, l'Association des médecins de l'Ontario et l'industrie pharmaceutique.

7.16 Par conséquent, le comité recommande que, d'ici 1991, le College of Physicians of Ontario, après avoir consulté l'Association des médecins de l'Ontario et l'industrie pharmaceutique, développe et publie des règles d'éthique pour guider les rapports entre les médecins et l'industrie, ces règles portant également sur la participation de l'industrie à l'éducation médicale permanente.

7.17 Par conséquent, le comité recommande que le ministère des Collèges et Universités soit invité à promouvoir et à financer la mise sur pied d'un département de pharmacologie clinique dans chaque école de médecine de l'Ontario. Ils devraient être étroitement rattachés au centre pour l'étude de la prescription médicamenteuse. (Voir la recommandation 7.2)

7.18 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario, la Société canadienne des pharmaciens d'hôpitaux (section de l'Ontario) et l'Ontario

Pharmacists' Association soient invités à créer des mécanismes officiels, aux niveaux provincial et local, qui renforceront les liens professionnels sur les questions relatives à la consultation et la communication avec les patients, ainsi que sur d'autres questions d'intérêt commun. Nous suggérons de mettre l'accent sur la liaison au niveau communautaire, entre particuliers et dans des groupes.

7.19 Par conséquent, le comité endosse la recommandation du groupe d'étude sur la consommation médicale et la prestation des soins médicaux (groupe d'étude Scott) pour la création du Conseil de l'Ontario sur l'évaluation de la technologie médicale, et recommande que parmi ses fonctions, cet organisme examine les nouveaux médicaments très coûteux.

7.20 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques soit invité à réviser tous les produits grand public au titre du Régime de médicaments gratuits de l'Ontario, comme il le fait pour les autres produits de prescription, et que tous les produits grand public inscrits dans le formulaire soient classés parmi les médicaments à usage général ou à usage limité.

Chapitre VIII Délivrance/administration

Un des principaux domaines du mandat du comité d'enquête a trait à la délivrance des médicaments et au rôle du personnage principal dans cette fonction—le pharmacien. Le chapitre huit, qui porte sur la délivrance des médicaments, fait l'objet du quatrième rapport intérimaire du comité d'enquête. Le comité est d'avis que les recommandations dans ce domaine, si elles sont adoptées, mèneront à une redéfinition souhaitable et de grande portée du rôle du pharmacien et que l'Ontario a la possibilité d'assumer, sous ce rapport, un rôle de chef de file à la fois à l'échelle nationale et internationale.

Dans l'élaboration des recommandations, le comité a tenu compte du fait que les responsabilités du pharmacien englobent deux fonctions principales : des activités cognitives axées sur le patient, par exemple la consultation avec les patients, les prescripteurs et autres professionnels de la santé, et des activités qui sont axées sur le produit, par exemple l'acquisition, l'entreposage, l'étiquetage, l'emballage et la délivrance des médicaments, ainsi que la tenue des dossiers. Les problèmes relatifs à ces deux fonctions sont reflétés dans le rapport.

Les conditions économiques de l'exercice de la pharmacie dans la communauté à l'heure actuelle risquent d'avoir un impact négatif sur la prestation de services axés sur le patient, du fait que le système de paiements est structuré de façon à rembourser les pharmaciens sur la base des médicaments délivrés, et non pas sur celle des services professionnels dispensés. Des stratégies s'imposent pour rémunérer la prestation de services souhaitables, axés sur le patient, tout en maintenant la fonction traditionnelle des pharmaciens, qui est de délivrer des médicaments. Le rapport examine également les facteurs qui mènent à des changements dans l'exercice de la pharmacie, comme les changements dans les attentes du public et des professionnels, le vieillissement de la population, les pressions en vue de freiner la hausse des coûts, la demande dépassant l'offre pour ce qui est des pharmaciens, l'augmentation de la spécialisation professionnelle, l'évolution de la technologie et les questions concernant le maintien de la compétence professionnelle.

Les recommandations relatives au produit ont trait à l'expansion du rôle du personnel auxiliaire non professionnel, des systèmes d'information qui donnent des renseignements sur les interactions médicamenteuses indésirables, les normes d'emballage et d'étiquetage conçues en fonction de la commodité pour le

consommateur, plus particulièrement pour ce qui a trait aux patients ayant des besoins spéciaux en matière d'information.

Les recommandations axées sur le patient portent sur l'éducation du public, en insistant particulièrement sur les personnes âgées; la nécessité des profils pharmacothérapeutiques, les «cartes à mémoire», l'accès du pharmacien aux diagnostics du patient, le remboursement des consultations avec le patient, l'expansion du rôle clinique des pharmaciens, les comités de pharmacothérapie dans la communauté et les recommandations traitant des changements dans les études de pharmacie. Ces derniers changements comprennent notamment une restructuration de la formation actuelle en pharmacie, des changements dans l'envergure de la Faculté de pharmacie de l'Université de Toronto, la création d'une nouvelle faculté de pharmacie, la création d'un programme de doctorat en pharmacie, l'enseignement en commun pour les étudiants des facultés de pharmacie et de médecine, ainsi que l'accent croissant sur la communication interprofessionnelle dans la formation des étudiants en médecine, en soins infirmiers et en pharmacie.

Le rôle des infirmiers est examiné en fonction des systèmes d'acquisition médicale «faciles pour les infirmiers» dans les établissements de soins de longue durée, des consultations aux patients, de la participation aux comités de pharmacothérapie et de thérapeutique et de l'éducation permanente, et en fonction des mécanismes de recherche de solution dans les cas de désaccord quant à la pertinence des thérapies. Des recommandations ont été formulées à cet effet.

Les autres discussions et recommandations ont trait aux pharmacies d'hôpitaux, aux soins à domicile, aux programmes de résidence en pharmacie dans les hôpitaux et à l'utilisation de médicaments à l'étude pour les essais cliniques. Le rôle des dispensateurs de soins à domicile et autres soins de santé est envisagé du point de vue des besoins de ces dispensateurs et à la lumière des services disponibles.

8.1 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario définisse clairement les rôles respectifs du personnel auxiliaire et des pharmaciens et qu'il s'assure que les aides effectuent les tâches techniques, axées sur le produit, tandis que les pharmaciens se concentrent sur les tâches axées sur le patient, par exemple surveiller la pharmacothérapie et donner des conseils sur les médicaments aux patients et à d'autres professionnels de la santé. Les stratégies utilisées pour en assurer l'application devraient être associées à la promulgation de normes en matière d'exercice et d'assurance de la compétence.

8.2 Par conséquent, le comité recommande que, d'ici la fin de 1992, le ministère de la Santé, l'Ordre des pharmaciens de l'Ontario et l'Ontario Pharmacists' Association établissent conjointement les exigences portant sur les systèmes de gestion par ordinateur et les directives qui en régissent l'usage, de façon à s'assurer l'accès optimal aux profils des patients et aux programmes relatifs aux interactions indésirables des médicaments. D'autre part, le comité recommande que l'Ordre des pharmaciens de l'Ontario établisse des directives régissant l'exercice en vue de mettre en oeuvre l'utilisation optimale de ce genre de système de gestion des données.

8.3 Par conséquent, le comité recommande que, d'ici la fin de 1990, des normes soient établies pour les produits pharmaceutiques présentés dans ce qu'on appelle des emballages «format délivrance» ou «emballage d'origine». Ces normes devraient assurer qu'aucun emballage d'origine délivré ne devrait créer d'incertitude ou de confusion, gêner les traitements individualisés,

entraver l'interchangeabilité des produits pharmaceutiques (aux fins de l'interchangeabilité, les caractéristiques physiques des emballages ne devraient pas être considérés comme étant uniques), ni constituer un outil de commercialisation ou de promotion (la promotion auprès du public d'une certaine marque ne devrait pas être une caractéristique du graphisme ou de l'étiquetage). Par ailleurs, les emballages devraient obligatoirement répondre aux normes d'un emballage protège-enfants.

8.4 Le comité recommande en outre que le ministère de la Santé, en consultation avec les organismes intéressés appropriés, entame sans tarder des discussion avec la Direction générale de la protection de la santé et Bien-être social Canada pour établir ces normes.

8.5 Par conséquent, le comité recommande que d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario crée un groupe de travail ayant expressément pour but de réaliser l'expansion de la pratique consistant à fournir des étiquettes auxiliaires et d'autres renseignements imprimés sur les produits de prescription, ainsi que le renforcement verbal par le pharmacien à l'intention du patient. Ce groupe de travail devrait inclure un ou des représentant des consommateurs.

8.6 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario encourage la profession à porter une attention toute particulière aux besoins des patients handicapés visuels en utilisant des notices et un graphisme appropriés, à gros caractères, chaque fois que cela est possible dans la préparation de l'étiquetage d'un produit de prescription.

8.7 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario encourage l'utilisation d'étiquettes et d'autres instructions dans la langue que le patient connaît bien, le pharmacien ayant pour responsabilité de donner le renforcement approprié par voie verbale.

8.8 Par conséquent, le comité recommande que, d'ici la fin de 1990, le ministère de la Santé effectue une campagne d'éducation, conçue principalement à l'intention des personnes âgées, et recommandant aux patients de choisir une pharmacie pour y obtenir, dans la mesure du possible, tous les services de pharmacie.

8.9 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario réalise l'application de cette tendance volontaire par des règlements exigeant de toutes les pharmacies qu'elles maintiennent des profils pharmaceutiques des patients, conformément à des normes définies quant à leur teneur.

8.10 Par conséquent, le comité recommande que l'Ordre des pharmaciens de l'Ontario, l'Ontario Pharmacists' Association, le ministère de la Santé et d'autres parties intéressées travaillent diligemment à la mise au point de dossiers transférables concernant les dossiers pharmaceutiques des patients, par exemple sous forme de «cartes à mémoire».

8.11 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Association des médecins de l'Ontario, le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes d'Ontario, l'Ontario Pharmacists' Association et l'Ordre des pharmaciens de l'Ontario élaborent des directives pour

s'assurer que le pharmacien, lorsque cela est approprié au point de vue clinique et avec le consentement du patient, ait accès au diagnostic du patient.

8.12 Par conséquent, le comité recommande que, d'ici la fin de 1990, le ministère de la Santé, en collaboration avec les organismes intéressés appropriés, par exemple l'Ontario Pharmacists' Association et l'Ordre des pharmaciens de l'Ontario, organise une campagne pour sensibiliser le public aux services auxquels on peut s'attendre de la part du pharmacien, en mettant l'accent sur ceux consistant à donner des renseignements sur l'usage approprié des médicaments.

8.13 Par conséquent, le comité recommande que l'Ordre des pharmaciens de l'Ontario exige que, d'ici la fin de 1991, toutes les pharmacies de l'Ontario aient un endroit convenable pour la consultation, où les patients peuvent discuter de leurs médicaments avec un pharmacien, et cela dans l'intimité et dans un confort relatif.

8.14 Le comité recommande en outre que les pharmaciens exercent davantage de contrôle sur la vente des médicaments en vente libre et que, d'ici la fin de 1991, l'Ordre des pharmaciens de l'Ontario exige que toutes les pharmacies de l'Ontario aient un rayon des produits professionnels, adjacent ou contigu à l'officine, où doivent se trouver tous les médicaments en vente libre. [Cette consigne n'inclut pas les médicaments de la liste «C», qui ne doivent pas être disponibles en libre choix.]

8.15 Par conséquent, le comité recommande que, d'ici la fin de 1991, l'Ordre des pharmaciens de l'Ontario exige l'utilisation, dans la pharmacie, d'enseignes et de matériel imprimé pour avertir le public de l'importance qu'il y a à consulter un pharmacien concernant l'emploi des médicaments en vente libre, surtout lorsqu'on les prend en même temps que des produits de prescription.

8.16 Par conséquent, le comité recommande que, d'ici la fin de 1991, le ministère de la Santé, en collaboration avec l'Ontario Pharmacists' Association, établisse des projets pilotes pour examiner et évaluer des mécanismes de remboursement offerts à titre de solution de rechange qui rémunéreraient le fournisseur de services pharmaceutiques professionnels et qui seraient indépendants de la vente ou de la délivrance d'un médicament.

8.17 Par conséquent, le comité recommande que, d'ici la fin de 1992, le ministère de la Santé, conjointement avec l'Ontario Pharmacists' Association, l'Ordre des pharmaciens de l'Ontario et l'Ontario Hospital Association, crée un lien entre les dossiers pharmaceutiques des patients dans les pharmacies de la communauté et les pharmacies d'hôpital, et qu'ils s'assurent que les consultations qui ont lieu avant l'hospitalisation ou avant le renvoi à domicile du patient soulignent au patient l'importance d'un tel échange de renseignements.

8.18 Par conséquent, le comité recommande que le ministère de la santé, conjointement avec l'Ontario Hospital Association, l'Association des médecins de l'Ontario, l'Ontario Pharmacists' Association, la Société canadienne des pharmaciens d'hôpitaux (section de l'Ontario) et l'Ordre des pharmaciens de l'Ontario encouragent immédiatement l'expansion du rôle clinique des pharmaciens dans l'utilisation accrue des formulaires, de la consultation pharmacocinétique, de la surveillance de la pharmacothérapie et de l'intervention subséquente en cas de besoin.

8.19 Par conséquent, le comité recommande que, d'ici la fin de 1992, les ministères de la Santé et des Services sociaux et communautaires, en collaboration avec l'Association des médecins de l'Ontario, l'Association des maisons de soins infirmiers de l'Ontario, l'Ontario Association of Non Profit Homes and Services for Seniors, l'Ontario Pharmacists' Association et l'Ordre des pharmaciens de l'Ontario, créent des projets pilotes qui font appel aux services de comités communautaires de pharmacothérapie basés sur les modèles existants en établissement.

8.20 Par conséquent, le comité recommande que, d'ici la fin de 1990, le ministère de la Santé et l'Ordre des pharmaciens de l'Ontario s'assurent que l'on encourage, que l'on soutienne et que l'on coordonne les programmes d'information sur les médicaments et qu'on les étende à d'autres professionnels.

8.21 Par conséquent, le comité recommande que, d'ici l'année universitaire 1992, ou au cours de l'année où une nouvelle faculté de pharmacie entrera en fonctions (voir la recommandation 8.22), la Faculté de pharmacie de l'Université de Toronto réduise ses inscriptions au nombre pour lequel elle a été conçue.

8.22 Par conséquent, le comité recommande que, d'ici l'année universitaire 1992, le ministère des Collèges et Universités crée en Ontario une seconde faculté de pharmacie, dont le nombre d'étudiants inscrits serait à peu près équivalent au chiffre réduit de la faculté de Toronto. Il devrait s'agir d'un programme de cinq ans semblable à celui recommandé pour l'Université de Toronto (voir la recommandation 8.23), établi dans une université de l'Ontario possédant un programme de sciences de la santé qui comprend la médecine. Dans la décision de créer cette faculté, on devrait tenir compte du besoin de ces services dans le Nord de l'Ontario, mais le comité croit que les avantages à ce que les facultés de médecine et de pharmacie se trouvent au même endroit ont plus de poids que les considérations géographiques.

8.23 Par conséquent, le comité recommande que, d'ici l'année universitaire 1991, l'Université de Toronto commence un programme d'études de pharmacie de premier cycle de cinq ans, afin de permettre une formation pratique plus structurée et un enseignement accru dans les domaines des communications, de la consultation avec les patients, de la thérapeutique, de l'information sur les médicaments, de la pathopsychologie et de la gériatrie.

8.24 Par conséquent, le comité recommande que le programme de stages pratiques offert aux étudiants et aux internes en pharmacie soit entièrement structuré et qu'il soit intégré au programme de cinq ans recommandé ci-dessus. (Voir la recommandation 8.23.)

8.25 Par conséquent, le comité recommande au ministère des Collèges et Universités que, au cours des deux prochaines années, un programme de doctorat en pharmacie soit créé dans une faculté de pharmacie appropriée d'une université de l'Ontario.

8.26 Par conséquent, le comité recommande que, d'ici l'année universitaire 1991, les facultés de médecine et de pharmacie de l'Université de Toronto enseignent conjointement les étudiants dans le domaine des services axés sur les patients, y compris le choix de la pharmacothérapie, les techniques de surveillance et la consultation avec les patients. Cette recommandation est également adressée au ministère des Collèges et Universités et au Council of Ontario Faculties of Medicine à titre d'exigence pour la création d'une faculté de pharmacie supplémentaire.

8.27 Par conséquent, le comité recommande que le ministère des Collèges et Universités prenne une décision concernant la planification d'un tel centre des sciences de la santé dans le Nord de l'Ontario.

8.28 Par conséquent, le comité recommande que, d'ici la fin de 1990, la Faculté de pharmacie de l'Université de Toronto révise son programme d'études en vue de mettre davantage l'accent sur les communications, la consultation avec les patients, la thérapeutique, l'information sur les médicaments, la pathophysiologie et la gériatrie. En même temps, l'Ordre des pharmaciens de l'Ontario devrait réviser ses exigences en matière d'éducation permanente, de façon à y inclure des cours de pharmacologie relatifs à la gériatrie et à la pédiatrie, de même que des cours sur l'information relative aux médicaments, la mixtion intraveineuse, la radiopharmacie et l'alimentation parentérale totale.

8.29 Par conséquent, le comité recommande que, d'ici l'année universitaire 1991, l'Université de Toronto et le Council of Ontario Universities' Health Science Faculties s'assurent que la formation des étudiants en médecine, en soins infirmiers et en pharmacie comprend un volet qui met l'accent, de façon appropriée, sur la nécessité de communiquer au patient l'importance de l'utilisation appropriée des médicaments.

8.30 Par conséquent, le comité recommande que, d'ici 1991, le ministère de la Santé, conjointement avec l'Ontario Hospital Association, l'Ontario Association of Non Profit Homes and Services for Seniors et l'Association des maisons de soins infirmiers de l'Ontario révisent et améliorent au besoin les systèmes d'acquisition, d'entreposage, de délivrance et d'administration des médicaments dans les établissements pour soins de longue durée.

8.31 Par conséquent, le comité recommande la création d'un comité interdisciplinaire, composé de représentants de l'Ordre des infirmières et infirmiers de l'Ontario, du College of Physicians and Surgeons of Ontario, et de l'Ordre des pharmaciens de l'Ontario, afin de déterminer le rôle approprié de la profession d'infirmier dans la consultation avec les patients.

8.32 Par conséquent, le comité recommande la participation des soins infirmiers aux comités sur la révision de l'utilisation médicamenteuse, la pharmacie et la thérapeutique.

8.33 Par conséquent, le comité recommande que :

a) L'enseignement permanent des infirmiers concernant la pharmacothérapie optimale soit accru; et

b) L'Ordre des infirmières et infirmiers de l'Ontario soit invité à réexaminer les programmes d'enseignement en soins infirmiers pour s'assurer qu'ils comprennent des connaissances suffisantes en thérapeutique de base, afin de rendre plus significatives les études et les expériences après l'obtention du diplôme, de sorte que l'infirmier devienne un conseiller plus efficace en matière de traitement.

8.34 Par conséquent, le comité recommande que :

a) L'Ordre des infirmières et infirmiers de l'Ontario précise et établisse des normes pour l'enseignement de base et l'éducation permanente concernant la pharmacothérapie; et

b) Le ministère de la Santé budgétise des fonds suffisants pour permettre à ses organisations de soins de santé de financer la participation d'infirmiers à des programmes d'éducation

permanente (c.-à-d. les défrayer de leurs dépenses d'éducation).

8.35 Par conséquent, le comité recommande que dans toute organisation où travaille un infirmier administrant des médicaments, il existe un mécanisme approprié pour la recherche de solution dans les cas de désaccord quant à la pertinence des thérapies.

8.36 Par conséquent, le comité recommande que, dans tous les établissements de soins de santé de l'Ontario, on crée des mécanismes pour bien renseigner les patients quant à leur plan de traitement avant leur renvoi à domicile. On doit accorder suffisamment de temps pour ceci; si cette tche incombe aux infirmiers, il faudra prévoir des ressources adéquates pour leur assurer une formation appropriée et permanente concernant la pharmacothérapie.

8.37 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario, la section de l'Ontario de la Société canadienne des pharmaciens d'hôpitaux et l'Ontario Hospital Association prennent des mesures pour s'assurer que toutes les pharmacies d'hôpitaux exigent des profils pharmaceutiques des patients, conformément à des normes définies quant à leur teneur.

8.38 Par conséquent, le comité recommande que le ministèrère de la Santé et l'Ontario Hospital Association révisent le raisonnement derrière la ligne de conduite concernant le remboursement des ordonnances au titre du Programme de médicaments gratuits de l'Ontario dispensées aux malades externes des hôpitaux.

8.39 Par conséquent, le comité recommande que d'ici 1991, le ministère de la Santé, en collaboration avec l'Ontario Hospital Association, crée des mécanismes pour compenser adéquatement les hôpitaux offrant des services pharmaceutiques professionnels aux malades externes.

8.40 Par conséquent, le comité recommande que l'alimentation parentérale totale, les antibiotiques administrés par intraveineuse, les analgésiques et les autres programmes concernant les médicaments pour les soins à domiciles soient améliorés et élargis, grâce à un programme de remboursement d'encouragement devant être négocié d'ici 1991 par le ministère de la Santé, l'Ontario Hospital Association, l'Ontario Pharmacists' Association et d'autres parties en cause.

8.41 Par conséquent, le comité recommande que, d'ici 1991, le ministère de la Santé, ou tout autre organisme approprié chargé d'octroyer des subventions, fournisse les fonds nécessaires pour augmenter tant le traitement des résidents en pharmacie dans les hôpitaux que le nombre de postes disponibles pour ces résidents.

8.42 Par conséquent, le comité recommande que d'ici 1991, l'Ontario Hospital Association, l'Association des médecins de l'Ontario, le ministère de la Santé et la section de l'Ontario de la Société canadienne des pharmaciens d'hôpitaux révisent les mécanismes régissant l'utilisation des médicaments à l'étude pour des essais cliniques dans les hôpitaux, dans l'intention d'établir des normes et de trouver des moyens de limiter les coûts qui soient appropriés du point de vue moral.

8.43 Par conséquent, le comité recommande qu'une limite légale de responsabilité soit établie pour l'administration des médicaments, de sorte que les associations et les personnes à leur service soient déchargées, sous des conditions précises, de leur responsabilité quant à l'administration ou la surveillance des médicaments dans les établissements.

8.44 Par conséquent, le comité recommande que des cours portant sur les qualifications requises par les professionnels de la santé pour administrer les médicaments et surveiller l'observance thérapeutique des patients en établissement soient développés et qu'ils soient offerts dans le cadre de programmes d'hygiène publique.

8.45 Par conséquent, le comité recommande que les programmes prévoyant la surveillance de l'observance pharmacothérapeutique des patients et l'administration des médicaments, et les activités de rappel, soient favorisés et financés dans le cadre de programmes de santé communautaire et d'hygiène publique.

8.46 Par conséquent, le comité recommande que les programmes de surveillance de l'observance pharmacothérapeutique soient inclus dans le cadre des programmes approuvés qui sont développés ou mis en oeuvre par les équipes communautaires d'évaluation, les hôpitaux de jour et les centres pour soins de jour.

Chapitre IX L'utilisation médicamenteuse

Ce chapitre, qui porte sur les consommateurs et les soins pharmaceutiques, fait le résumé de données diverses, de manière à présenter un profil démographique des usagers des services de santé en Ontario.

Un examen de la protection au titre du Programme de médicaments gratuits de l'Ontario et au titre des régimes privés d'assurance-maladie révèle que certaines catégories de personnes éprouvent des problèmes d'accès particuliers aux médicaments dont elles ont besoin, notamment les personnes et les familles à faibles revenus qui ne reçoivent pas de prestations de vieillesse ou d'aide sociale, et les personnes qui encourent des frais désastreux en médicaments. Le comité recommande de couvrir les frais de médicaments pour ces catégories de personnes, tout en imposant toutefois une quote-part à celles dont le revenu dépasse les niveaux d'aide sociale. Une seconde recommandation, qui découle d'un examen de l'élasticité de la demande lorsque les consommateurs doivent payer une partie de leurs frais de médicaments, consiste à faire payer aux prestataires du Programme de médicaments gratuits de l'Ontario qui ne reçoivent pas d'aide sociale une partie de chaque ordonnance, jusqu'à un maximum annuel de 250 $.

Une révision de l'utilisation médicamenteuse—qui est en quelque sorte une assurance de la qualité susceptible d'améliorer la prescription médicamenteuse et, par conséquent, la santé du public—doit comprendre de l'information sur quatre éléments étroitement liés : le médicament (thérapie); le patient (diagnostic); le médecin (prescripteur); et la pharmacie (dossiers sur la délivrance). Selon le comité, une révision de l'utilisation systématique, si elle est effectuée correctement, empêchera également le gaspillage et fera réaliser des économies.

Le comité recommande aussi que la province finance un programme d'information sur les réactions indésirables aux médicaments. L'Association des médecins de l'Ontario offre un tel programme à titre de service public depuis 1981. Cependant, des contraintes économiques menacent maintenant la continuation de ce programme, et le comité d'enquête est d'avis que, comme il vaut la peine de le préserver, la province devrait prendre des mesures pour garantir sa survie.

Ce chapitre traite également de l'usage impropre des produits de prescription et de la toxicomanie. Le comité d'enquête a étudié les facteurs contribuant à un usage excessif, comme les niveaux d'utilisation, la demande des consommateurs et les attentes sociales,

ainsi que le rôle joué par les fabricants et les médecins. Il a également examiné l'usage illicite des produits de prescription; selon la Gendarmerie royale du Canada, la Police provinciale de l'Ontario et la Police de la communauté urbaine de Toronto, il s'agit d'un problème qui prend de l'ampleur.

Il faut instaurer d'énergiques programmes d'éducation mettant en cause le milieu scolaire, les médias, nos trois paliers de gouvernement, l'industrie, les travailleurs et les groupements communautaires pour éduquer le public sur les danger de l'usage excessif des médicaments et la toxicomanie. Il est aussi recommandé que les trois paliers de gouvernement mettent sur pied les mécanismes nécessaires pour rendre la toxicomanie, y compris la consommation impropre de produits de prescription, aussi socialement indésirable que ne l'est devenue la cigarette.

Tenant pour acquis que la prévention est préférable au traitement, le comité d'enquête recommande que les ordonnances pour les somnifères, les sédatifs et les tranquillisants soient données pour la période la plus courte possible et que les contenants portent clairement, lorsqu'il y a lieu, le libellé «sans renouvellement». On devrait entreprendre des recherches sur les diverses méthodes pour réduire l'usage excessif de ces substances.

9.1 Par conséquent, le comité recommande que les personnes à faibles revenus ou les personnes encourant des frais désastreux en médicaments, qui ne sont pas protégées par des régimes privés d'assurance-maladie, soient défrayées de leurs médicaments par l'entremise d'un régime fondé sur un examen des ressources provenant du revenu, compte tenu d'un ajustement pour le nombre de personnes à charge, conformément aux lignes de conduite de l'aide sociale, et que des co-paiements soient perçus des personnes et des familles dont les revenus dépassent les niveaux d'aide sociale.

9.2 Par conséquent, le comité recommande que les prestataires du Programme de médicaments gratuits de l'Ontario qui ne reçoivent pas d'aide sociale soient tenus de participer aux coûts des ordonnances. Le partage des coûts prendrait la forme d'un montant forfaitaire ne dépassant pas 4 $, à payer pour chaque ordonnance. Le maximum annuel à payer par le consommateur pour des produits de prescription serait fixé à 250 $. Les frais de médicaments au-delà de ce montant seraient complètement couverts par le Programme de médicaments gratuits de l'Ontario.

9.3 Par conséquent, le comité recommande que le ministère de la Santé, conjointement avec le Council of Ontario Faculties of Medicine, entreprenne le développement, d'ici 1992, de programmes pilotes pour la révision de l'utilisation médicamenteuse, qui pourront devenir un élément important de l'éducation médicale permanente. Ces programmes auraient pour objet d'identifier des moyens pratiques et efficaces d'améliorer la qualité de la prescription médicamenteuse et l'état de santé des patients. De tels projets devraient recevoir l'appui financier, à distance, de la province. (Voir aussi la recommandation 4.6.)

9.4 Par conséquent, le comité recommande qu'un programme d'information sur les réactions indésirables aux médicaments en Ontario soit maintenu et qu'il reçoive l'assistance de la province.

9.5 Par conséquent, le comité recommande que les gouvernements du Canada et de l'Ontario, ainsi que les municipalités, mettent sur pied les mécanismes nécessaires, adéquatement financés et soutenus, pour rendre la toxicomanie aussi socialement indésirable.

9.6 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario, le Collège des médecins de famille du Canada et la Fondation de la recherche sur la toxicomanie effectuent conjointement des recherches sur les diverses méthodes pour réduire l'usage excessif des somnifères, des sédatifs et des tranquillisants.

9.7 Que les produits pharmaceutiques et les autres thérapies médicamenteuses indiquées médicalement (comme les enzymes et les vitamines nécessaires) servant au traitement de la fibrose cystique soient subventionnés au titre du programme pertinent du ministère de la Santé.

9.8 Que les produits pharmaceutiques et autres fournitures médicales servant au traitement de la thalassémie soient subventionnés au titre du programme pertinent du ministère de la Santé.

Chapitre X Les thérapies de rechange

Bien que le comité n'ait pas été invité à examiner des solutions de rechange à la prescription médicamenteuse, un certain nombre de mémoires qui lui ont été présentés ont souligné cet aspect de la question. Il existe un vaste ensemble de documents d'origine professionnelle et profane sur les dangers d'une attitude selon laquelle il existe «une pilule pour chaque bobo».

Bien que le rapport ne tente pas de faire un examen systématique des solutions de rechange aux produits de prescription, il conclut qu'une telle étude, effectuée conformément aux normes scientifiques, serait méritoire. Parmi les domaines qui méritent un regard plus approfondi des spécialistes et des législateurs, on mentionne à titre d'exemple le rôle de la nutrition par rapport à la santé et la maladie.

Ce chapitre ne comprend pas de recommandations spécifiques, mais suggère :

- que le ministère de la Santé commandite un examen critique de la documentation vaste mais largement anecdotique portant sur la pharmacologie nutritionnelle;
- qu'on accorde plus de soutien à l'intention des départements des sciences de la nutrition dans les facultés de médecine en Ontario et en vue d'études menées conjointement avec les départements cliniques appropriés;
- que soit convoquée une conférence générale des plus réputés cliniciens, scientifiques de la nutrition et médecins ayant de l'expérience dans l'application des thérapies nutritionnelles, en vue d'explorer les tout derniers dévelop-pements dans ce domaine;
- qu'on organise des projets, après la révision de la documentation et la conférence générale, pour mettre en application les thérapies nutritionnelles les plus prometteuses; et
- qu'on examine les implications du traitement par la nutrition contenues dans les recommandations de la Révision des lois régissant les professions de la santé (rapport Schwartz).

Chapitre XI La pharmacothérapie des personnes âgées

Les organes détériorés des personnes âgées n'acceptent pas les médicaments aussi bien que ceux des jeunes gens. Chez ce groupe, la médication pose un risque parce qu'il faut modifier les posologies pour tenir compte de l'absorption, de la distribution, du métabolisme, de l'élimination et de la réaction aux médicaments qui sont typiques à l'organisme d'une personne âgée.

Le Formulaire du Programme de médicaments gratuits de l'Ontario devrait comprendre une liste des médicaments appropriés aux personnes âgées. Le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques examine la disponibilité de formulations liquides de certains médicaments comme le fer, l'acétaminophène et autres au besoin.

La génération actuelle et celle qui avance en âge continueront vraisemblablement de souffrir de bon nombre de maladies chroniques pouvant être traitées par une pharmacothérapie judicieuse. Selon une étude commandée par le comité d'enquête, 80 p. 100 de toutes les réactions médica-menteuses indésirables sont attribuables à la prolongation de propriétés pharmacologiques connues et pourraient être évitées.

L'étude indique que les causes principales des réactions indésirables sont la polypharmacie, la médication faite soi-même, l'inobservance thérapeutique, l'entreposage incorrect, le manque de formation des médecins quant à la façon appropriée de prescrire des médicaments aux personnes âgées, les problèmes de surveillance des patients âgés, un double système de prescription dans les hôpitaux et dans le cadre des soins après le renvoi à domicile et la sensibilité accrue aux médicaments chez les personnes âgées. Pour faire face à ces problèmes, le comité a recommandé que les «cartes à mémoire» qui seront offertes pour faciliter l'utilisation, la surveillance et la révision des médicaments soient programmées de façon à permettre la détection rapide de problèmes de pharmacothérapie. En outre, le système de communication électronique recommandé aux pharmacies devrait être programmé de manière à tenir compte des problèmes spéciaux concernant la prescription médicamenteuse aux personnes âgées.

Les fabricants ont également un rôle important à jouer afin de s'assurer de la sûreté des nouveaux médicaments. Lorsque cela est faisable, les résultats d'essais de médicaments qui accompagnent les demandes de permis et d'inscription devraient inclure des données provenant de personnes âgées. De plus, lorsque cela est pertinent, les fabricants devraient fournir des données et des recommandations en vue de la prescription aux personnes âgées. On devrait demander aux facultés de médecine qui commanditent des essais de médicaments d'inclure des sujets âgés.

Comme les personnes âgées sont davantage enclines à souffrir de maladies multiples, elles sont particulièrement susceptibles de subir des réactions indésirables causées par l'interaction médicamenteuse, surtout si plusieurs prescripteurs ne sont pas au courant des autres médicaments que prend un patient.

Pour faire face à ce problème, le comité a recommandé que : les personnes âgées se choisissent un médecin personnel et n'en changent pas; les spécialistes et les cliniques d'hôpitaux informent le médecin de famille du patient des modifications apportées au régime médicamenteux du patient; des règles de conduite soient établies pour faire en sorte que les médecins dispensateurs de soins primaires tiennent et mettent à jour une liste des médicaments pris par un patient âgé; les médecins soient encouragés à recommander que les patients ayant un régime médicamenteux complexe apportent avec eux tous leurs médicaments à chaque visite à un médecin ou à l'hôpital.

Pour que les médecins et autres dispensateurs de soins de santé aient la formation voulue pour s'occuper des personnes âgées, le comité demande que les facultés de médecine révisent leurs programmes d'enseignement pour s'assurer qu'elles offrent l'enseignement et l'expérience nécessaires pour la prescription médicamenteuse aux personnes âgées, et que les programmes de formation de deuxième et troisième cycles en médecine

familiale et dans les spécialités comprennent des rotations spécifiques en médecine gériatrique, dont une expérience supervisée en pharmacothérapie. En outre, l'Association des médecins de l'Ontario, le Collège royal des médecins et chirurgiens du Canada et le Collège des médecins de famille du Canada sont invités à examiner les objectifs et les initiatives dans le domaine de l'éducation en ce qui a trait à la pharmacothérapie pour les personnes âgées.

Le chapitre se termine sur une recommandation à l'effet que tous les hôpitaux pour soins aigus et les établissements pour soins gériatriques de longue durée mettent sur pied des systèmes en vue de surveiller la pharmacothérapie des patients âgés.

11.1 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques soit invité à examiner de façon spécifique la disponibilité de formulations liquides ou autres de certains médicaments, comme le fer et l'acétaminophène, à l'intention des personnes qui ont de la difficulté à avaler ou à prendre des médicaments sous forme solide.

11.2 Par conséquent, le comité recommande que les cartes à mémoire, qui seront offertes pour faciliter l'usage, la surveillance et la révision des médicaments (voir la recommandation 8.10), soient programmées de manière à permettre la détection rapide de problèmes de pharmacothérapie (p. ex. des interactions médicamenteuses). Le système de communication électronique recommandé à toutes les pharmacies (voir la recommandation 8.2) devrait aussi être programmé pour tenir compte des problèmes spéciaux concernant la prescription médicamenteuse aux personnes âgées.

11.3 Par conséquent, le comité recommande que la Direction générale de la protection de la santé du gouvernement fédéral et le Comité d'appréciation des médicaments et des thérapeutiques de l'Ontario :

a) soient invités à encourager les fabricants à faire en sorte que, lorsque cela est possible et pertinent, les résultats d'essais de médicaments qui accompagnent les demandes de permis et d'inscription incluent des données provenant de personnes âgées, afin que la sûreté et la l'efficacité du médicament puissent être déterminées pour ce groupe. De même, les facultés de médecine ontariennes qui commanditent des essais de médicaments devraient être invitées à inclure des sujets gés lorsque cela est possible et pertinent; et

b) soient invités à exiger des fabricants de produits pharmaceutiques qu'ils fournissent des données et des recommandations spécifiques en vue de la prescription aux personnes âgées, lorsque cela est pertinent.

11.4 Par conséquent, le comité recommande que :

a) Le ministère de la Santé, sur l'avis d'organismes pour les personnes âgées, développe des lignes de conduite et une campagne d'information dans le but d'amener, d'ici 1994, tous les patients, et surtout les personnes âgées, à se choisir un médecin personnel et à ne pas en changer.

b) L'Association des médecins de l'Ontario, l'Ontario Hospital Association et le College of Physicians and Surgeons of Ontario établissent d'ici 1992 des lignes de conduite pour assurer que les spécialistes et les cliniques d'hôpitaux informent méticuleusement et rapidement le médecin de famille d'un patient de tout changement suggéré à son régime médicamenteux.

c) Le College of Physicians and Surgeons of Ontario, le Collège des médecins de famille du Canada et l'Association des médecins de l'Ontario établissent, d'ici 1992, des lignes de conduite pour amener les médecins qui dispensent des soins primaires à tenir et à mettre à jour régulièrement une liste des médicaments pris par un patient âgé. Cette information devrait être partagée avec les autres professionnels prenant soin du patient.

d) L'Association des médecins de l'Ontario et l'Ontario Hospital Association, conjointement avec des organisations pour les personnes âgées, établissent d'ici 1991 des règles de conduite pour communiquer aux médecins la nécessité d'exiger des patients ayant un régime médicamenteux complexe qu'ils apportent avec eux tous leurs médicaments à chaque visite à un médecin ou à l'hôpital.

11.5 Par conséquent, le comité recommande que, d'ici 1992, le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes de l'Ontario et l'Ontario Medical Association élaborent des lignes directrices pour que les ordonnances pour les somnifères, les sédatifs et les tranquillisants soient données pour la période la plus courte possible et que les contenants portent clairement le libellé «sans renouvellement» à moins d'une indication clinique contraire.

11.6 Par conséquent, le comité recommande que toutes les facultés de médecine de l'Ontario soient priées de réviser leurs programmes d'enseignement aux niveaux des premier, deuxième et troisième cycles, d'ici le 1er juin 1992, pour s'assurer que :

a) elles offrent l'enseignement et l'expérience nécessaires pour la prescription de médicaments aux personnes âgées, en soulignant les différences par rapport aux jeunes patients; et

b) tous les programmes de formation de deuxième et troisième cycles en médecine familiale et dans les spécialités comprennent des rotations spécifiques en médecine gériatrique, dont une expérience supervisée en pharmacothérapie, dans des établissements pour soins ambulatoires et de longue durée ainsi que dans des établissements poursoins aigus.

11.7 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario soit invitée à réviser, d'ici le 1er janvier 1992, les cours d'éducation permanente offerts aux médecins ontariens, en ce qui concerne tous les aspects de la médecine gériatrique et de la pharmacothérapie pour les personnes âgées, afin de déterminer s'ils sont adéquats. L'Association des médecins de l'Ontario, en collaboration avec les facultés de médecine ontariennes, devrait être invitée à s'assurer que les lacunes sont comblées, de sorte que les médecins ontariens puissent mettre facilement et régulièrement à jour leurs connaissances et leurs compétences concernant les soins aux personnes âgées et la prescription de médicaments pour elles.

11.8 Par conséquent, le comité recommande que le Collège royal des médecins et chirurgiens du Canada et le Collège des médecins de famille du Canada soient invités à réviser leurs objectifs en éducation et leurs exigences concernant l'enseignement médical en gériatrie et la pharmacothérapie des personnes âgées.

11.9 Par conséquent, le comité recommande que le ministère de la Santé, conjointement avec l'Ontario Hospital Association, l'Ontario Association of Non Profit Homes and Services for Seniors et l'Association des maisons de soins infirmiers de l'Ontario, exige que, d'ici le 1er juillet 1992, tous les hôpitaux pour soins aigus et les établissements pour soins géria-

triques de longue durée mettent sur pied des systèmes pertinents pour surveiller la pharmacothérapie des patients âgés.

Chapitre XII Conclusion et recommandations

Le dernier chapitre conclut que les Ontariens et Ontariennes reçoivent généralement un excellent traitement en ce qui concerne les produits de prescription et traite brièvement des problèmes qui ont été identifiés. Les recommandations sont définies en fonction de deux catégories : celles visant à améliorer la qualité du traitement mettant en cause des produits de prescription et celles visant à améliorer l'accès aux médicaments requis.

Un examen des incidences financières des diverses recommandations se rapportant au Programme de médicaments gratuits de l'Ontario révèle que, selon des prévisions à moyenne portée, la mise en oeuvre de toutes les recommandations représenterait des coûts supplémentaires d'environ 95 000 000 $ et ferait économiser 195 300 000 $, soit une économie nette d'environ 100 000 000 $ par année. Ceci est l'équivalent d'une réduction de 15 p. 100 du coût annuel du programme.

En ce qui concerne les répercussions financières des autres recommandations, il ressort de cette section que les modifications proposées au Comité d'appréciation des médicaments et des thérapeutiques et à la formation des pharmaciens représenteraient des sommes additionnelles d'environ 5 300 000 $ par année.

Il est impossible d'évaluer les incidences financières de plusieurs autres catégories de recommandations. Le chapitre se conclut par une liste des recommandations contenues dans le rapport.

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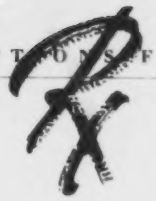


Chapter I
Introduction

The Pharmaceutical Inquiry of Ontario was established on May 26, 1988, by Order in Council pursuant to Section 9 of the Ministry of Health Act, R.S.O. 1980, Chapter 280, to examine the role and influence of the government of Ontario with respect to prescription drugs.

1.1 Availability, Access and Cost Effectiveness

In addressing the broad terms of reference, which are set out fully below, the Inquiry recognized that not all matters pertaining to the acquisition, distribution, prescribing, dispensing and use of prescription drugs in Ontario could be investigated in depth during its 22 month mandate. Hence, attention has been focused on those factors that assure that public funds and the influence of the government are applied so as to:

- promote the availability of high quality pharmaceutical products and optimal drug treatment for the people of Ontario;
- facilitate appropriate access to drug treatment for all those who need it; and
- achieve cost effectiveness.

These objectives are discussed in greater detail in chapter 2 of this report, following a description of the process and procedures adopted by the Inquiry and a statement of the place of prescription drugs in the overall health care system. Subsequent sections will review the history and present status of government drug programs and present our analysis of the problems that relate to the acquisition and distribution of pharmaceutical products in Ontario; discuss the activities of the health professionals who prescribe, dispense and administer prescription drugs; and deal with factors that influence the use and misuse of prescription drugs by the public. Options for effective responses to these problems are presented and preferred courses of action are recommended.

Since this report is submitted to the Minister of Health and the government of Ontario which commissioned it, most of the recommendations are directed to the government for consideration and action. However, some address professional associations, statutory bodies that regulate the health professions in Ontario, health science faculties in Ontario universities, pharmaceutical manufacturers and distributors, and the public itself.

Inquiry members have been greatly encouraged by the active and constructive participation of interested groups and by the prompt and positive response of the Minister of Health to recommendations made in interim reports. We have reason to hope that the recommendations submitted in this final report will receive favourable consideration. We are convinced that their implementation will improve the quality of drug therapy in Ontario, will improve access to prescription drugs for all those who need them, and will help eliminate unnecessary public expenditures on prescription drug programs.

1.2 Mandate of the Inquiry

The members of the Committee were appointed individually by Order-in-Council and were originally directed to report to the Minister of Health of Ontario and the Premier's Council on Health Strategy by December 31, 1989. Subsequently, a report to the Premier's Council on Health Strategy on February 15, 1990 was requested, and the mandate of the Inquiry was extended to March 31, 1990. A brief summary of the background of the Committee members and the Inquiry staff is presented in annex 1 to this report.

The Committee's terms of reference were the following:

"The Committee shall undertake an inquiry into all aspects of the government's role and influence in the prescription drug marketplace. In doing so, the Committee will examine issues with respect to acquisition, distribution, dispensing and prescribing in government-funded drug programs.

"The Committee will develop options and recommendations for the continuance, modification or restructuring of government-funded drug programs.

"In conducting the Inquiry, the Committee may specifically examine the following:

- The current drug programs operated by the government; their past, present and future trends in relation to government objectives.
- The cost effectiveness of the acquisition, distribution and financing mechanisms employed by the government.
- The most effective ways to ensure quality of care and quality assurance of drugs under the Ontario Drug Benefit program.
- The impact of utilization of drugs on the health status of eligible recipients.
- The current criteria for eligibility for the government sponsored programs.
- The most effective ways to integrate education, manpower, research and development and other relevant factors into an overall drugs and therapeutics program."

1.3 Process and Procedure

During the course of its work, the Inquiry benefited from the assistance, advice and information readily provided by individual members of the public; organized consumer groups and associations; manufacturers and distributors; associations of health professionals and individual nurses, pharmacists and physicians; the Ontario professional regulatory bodies; Health and Welfare Canada; several Ontario and other provincial ministries; third-party insurers; health science faculties of Ontario universities and community colleges; police forces of all three levels of government; and many others.

Some of this advice came to us unsolicited, beginning on the day the Inquiry was announced; suggestions continue to be received as this report is being written. Much more information derives from the Inquiry's specific requests for advice from parties involved in the prescription drug system, from the pharmaceutical manufacturers to members of the public who actually use the drugs.

Public hearings were held in Chatham, Hamilton, Kingston, Kitchener/Waterloo, Ottawa, Sudbury, Thunder Bay and Toronto. More than 100 presentations were made during 18 days of hearings which took place in October and November, 1988. Their quality was generally excellent, reflecting a substantial amount of preparation and a high level of interest. Media coverage of the hearings was thorough.

The Inquiry also held some hearings for interested parties on specific issues and received supplementary briefs from many who made public presentations. Committee members and staff met with various experts, public officials, professionals and representatives of industry. The list of groups and individuals who made formal presentations constitutes annex II.

The Inquiry also reviewed current Ontario government drug programs, previous studies and reports conducted in Ontario and elsewhere, and relevant legislation in Canada and abroad, and commissioned several research projects to provide supplementary information. The full reports of these projects are found in volume II which contains the appendices and appropriate sections have been introduced in the body of this report.

Although the Inquiry was directed to report its findings and recommendations by December 31, 1989, — a date which was later extended — interim progress reports to the Minister of Health were expected. When information obtained by the Inquiry was believed to support recommendations for change that are in the public interest, these were submitted in the interim reports.

The first interim report of August, 1988, presented the focus, process and plans of the Inquiry. The second report, dated December, 1988, reported on the public hearings and made specific recommendations regarding the special authorization system and the need to extend access to life sustaining drug products for persons with cystic fibrosis and thalassemia, two special high risk groups which face extremely high drug costs. The third interim report of April, 1989, made recommendations regarding drug utilization review; the provision of impartial, up-to-date information and prescribing guidance to physicians; and broadening the mandate of the province's Drug Quality and Therapeutics Committee with respect to determining drug interchangeability. This report also addressed problems affecting the wholesale distribution system and initiated an intensive review of options for dealing with these problems. The fourth interim report of December, 1989 presented an in-depth analysis of the changing role of the pharmacist in our society, and made important recommendations that follow from this.

The findings and recommendations contained in the interim reports are included within the appropriate context of this report.

Chapter II
Objectives of the Inquiry — Optimal Drug Therapy

It is the underlying assumption of this Inquiry that Ontarians should benefit from a system that will assure optimal drug therapy.

2.1 Optimal Therapy

Therapy must be clinically appropriate, accessible to all who need it and affordable. No one should be deprived of medically essential treatment because he or she cannot afford the drug costs. The present government supported programs, such as the Ontario Drug Benefit (ODB) program, have been of obvious advantage to eligible recipients—mainly low income Ontarians who would otherwise have had difficulty in obtaining necessary medications. The ready availability and rational use of prescription medication, which is the norm in this province, has contributed to improving both the quality and length of life of the people of Ontario. However, no system is perfect. The changes recommended in this report are designed to further reduce illness and disability, including adverse drug reactions, and to enhance health where possible.

We are aware that the rapidly escalating cost of the ODB program (see section 3.3) is a major reason for the establishment of the Inquiry, but wish to stress that the problem of cost must be kept in perspective. Expressed as a percentage of the gross provincial product, prescription drug related costs over the years look much less alarming, considering the remarkable therapeutic advances that are occurring. Prescribed drugs consumed 0.35 per cent of Ontario's gross provincial product in 1975 and this had risen only to 0.52 per cent by 1985.[1] By comparison, physician services, which were 1.1 per cent in 1975, grew to 1.42 per cent in 1985, and hospital services changed from 2.84 per cent to 3.02 per cent. As can be seen, it is the relative rates of increase which are alarming, not the absolute amounts. Prescription drug costs are rising at a much higher rate than are the other major elements of the health care system.

It is hard to demonstrate in a large population that improved pharmacotherapy directly translates into better personal health, because of the many factors that determine health and illness. However, on an individual or small group basis this is often obvious. At the same time it has been established that inappropriate application of drug therapy may cause or aggravate illness and also wastes resources. This is clearly undesirable.

Therefore, the ideal goal is **optimal therapy**. This is not only very attractive, but we believe, attainable.

[1] Health and Welfare Canada. National Health Expenditures in Canada 1975-1985. Cat. No. H21-99/1985E. Ottawa, Nov. 1987. Information updated in February of 1990.

2.2 Drugs and the Health Care System

The healing power of certain natural (and, later, synthetic) chemical substances has been recognized since antiquity. Traditionally, medications have constituted an important treatment mode in the hands of physicians who, in most societies, have been the socially mandated healers of the sick. Indeed the name of the profession, medicine, is the same as the name traditionally applied to chemical substances used for the purpose of healing (medicines, medications). The primitive medicine man, and today's technologically sophisticated physician, are linked by their reliance on drugs to alleviate suffering and extend life.

In the modern era, pharmacology (the study of the effects of drugs) and pharmacotherapy (the application of drugs as healing agents) have remained central to the management of many of the illnesses that afflict individuals worldwide. Indeed, the discovery and development of a large variety of effective drugs by pharmacologists and the pharmaceutical industry worldwide, is one of the success stories of this century, having paralleled, and at times spearheaded, the development of modern technologically driven scientific medicine. Advances in the understanding of the physiological, biochemical and, recently, molecular basis of many diseases, have frequently led to the discovery of valuable new drugs. At other times the sequence has been reversed: the empirical discovery of new and useful therapeutic agents has preceded and has contributed to the understanding of the bodily processes that fail in certain diseases. The discovery of potent new preventive and therapeutic agents has revolutionized health care, and, in the process, improved the human condition. This is a tribute to the many scientists—working in universities, in the innovative drug industry and in health care settings—who have discovered life-enhancing and-extending drugs, and to the institutions —private, public, commercial and therapeutic —which made this work possible.

As a result, modern health care without effective drugs is unthinkable. Although we often take their availability for granted, when drugs are scarce, as in conditions of disaster and war, we are reminded of the extent to which health, comfort and life depend upon them. This makes it understandable that society should be concerned about ensuring both the quality of drugs powerful enough to require professional prescription, and ready access by all who require them.

It is important to recognize that while drugs are a crucial component of the treatment of the sick and disabled, they are only a part of a complex health care system. Drugs are not treatments given in isolation; in 1988 the cost of prescription drugs accounted for approximately 5 per cent of the budget of the Ministry of Health (MOH) of Ontario.[2] Indeed, medical treatment in general, including drugs, is not an end in itself but a means to a desired outcome — the achievement, improvement and preservation of health. Therefore, it is valuable to examine briefly the relationships among health, illness and disease, and the way in which drug therapy can help.

Today, health is not defined merely as the absence of disease. More broadly, it is seen as "a positive concept emphasizing social and personal resources, as well as physical capacity".[3] Disease, strictly speaking, is a narrow term that refers to an abnormality of the human organism which impairs or threatens to impair normal functioning and

[2] Ont. Ministry of Treasury and Economics, *Economic Outlook and Fiscal Review: Ontario 1988*, p.96.
[3] World Health Organization. Quoted by J.R. Evans, chairman, in *Toward a Shared Direction for Health in Ontario: Report of the Ontario Health Review Panel*, Toronto, Ontario, June 1987.

may even pose a threat to life. Illness is a broader term that refers to a subjective state of feeling unwell which is frequently (but not always) associated with a specific disease. Health and illness are on a continuum and can be thought of as incompatible with each other. By contrast, a disease may be present even when the individual feels healthy (as, for example, in an early stage of diabetes, arteriosclerosis or cancer).

A person usually visits a physician because he or she feels ill, is afraid of having a disease, and/or seeks relief from unpleasant symptoms. The physician attempts to discover why the person feels ill, which includes identifying or ruling out the presence of disease. Having done this, the physician next attempts to help the person regain health, that is, to eliminate the feeling of illness to the extent possible.

What role do drugs play in this process? To promote health is, of course, the ideal of all health care systems. This has been underscored by influential reports issued by federal ministers of Health (Lalonde, 1974, Epp 1986) and, more recently, reports to the Ontario Minister of Health (Evans 1987, Podborski 1987, Spasoff 1987). The maintenance of health is largely related to healthy lifestyles, the protection of the physical environment, and the availability of psychological and social supports. Drugs do not ordinarily have a place in this process. Disease states are the exception: persons who need chronic medication, for example enzyme or hormone replacements, are a small percentage of the population. Episodes of acute illness which require medication are also exceptional in the life of an individual. For example, an otherwise healthy person will only require antibiotics for a brief period to treat infection.

To preserve health for the longest possible period in the human life span requires the prevention of illness. Great strides have been made in this regard during the past century, largely by the implementation of public health measures. These include immunization, improved nutrition, safety of water, food and air, and improvements in housing as well as general economic factors. Although prescription drugs sometimes do have a place in the primary prevention of illness, this is limited. For example, certain drugs and vaccines can protect persons who must work in environments where there is a risk of infection, such as malaria or hepatitis.

However, once a disease process has started, prevention of the full ravages of the disease involves rapid identification and arrest of the pathological process. Here is where the greatest strides have been made in personal health care by physicians and other health care professionals and here is where prescription drugs have the greatest impact.

If a disease process is diagnosed, it is likely that a drug can be prescribed that will arrest it, improve its symptoms or cure it. When a cure is not possible, drug therapy is often essential to keep us as healthy, comfortable and productive as the disease process allows. If no disease is discovered to account for the feelings of illness, it may still be possible to prescribe drugs that will make the person feel better or that will relieve symptoms or anxiety. However, in such circumstances, the drugs have a more restricted role to play.

Rehabilitation is the next task once the acute phase of the disease has been treated. Here, too, drugs can be helpful, though their role may be different than in the acute phase.

There is no place for prescription drugs as recreational agents. It is important to recognize that while drugs can be very useful in helping people cope with major stress, life problems are not solved by the use of chemicals.

To summarize, prescription drugs are most appropriately used in the treatment of disease states and for the short-term relief of

symptoms. Less often they are used in the prevention of further illness and as part of rehabilitation programs. Alternatives to drugs are preferable in the promotion and maintenance of health.

During the past 20 years, it has been the policy of the governments of Canada and all provinces to assure appropriate access to necessary medical treatment for all residents. The Canada Health Act (1984) has confirmed that provincial health plans must provide publicly administered, universal and comprehensive health care services, and all provinces and territories do so.

The means by which access to necessary prescription drugs is facilitated varies across Canada (see chapter 3). In Ontario, at present, all persons 65 years and older qualify for prescription drugs at no direct cost to themselves, as do persons receiving general welfare and family benefits and those who qualify for home care, chronic care and extended care programs. In-patients in hospitals and correctional institutions also receive free drugs as do people with specific, designated conditions and diseases. Ontario residents who are not members of these groups must either pay for drugs that have been prescribed for them or purchase private insurance. It is assumed that in this way all residents of Ontario will have access to prescription drugs.

Is this assumption well founded? Do all persons actually get the drugs they need? Alternatively, do some persons get prescriptions for drugs they do not need, or that are not effective and even dangerous for them? These questions, which relate to the mandate of the Inquiry (see section 1.2) reflect the place of prescription drugs in our health care system.

Although all drug treatment involves a degree of risk, when used appropriately pharmaceutical products can protect our health and, at times, our very lives. When used inappropriately, they can themselves produce illness or even death, as well as contributing to unnecessary expenditure of public funds.

2.3 The Appropriate Role of Government

It was repeatedly made clear during the Inquiry's public hearings that Ontarians continue to look to government to ensure access to prescribed drugs of high quality. Neither geographic location within the province nor economic status are regarded as acceptable barriers to obtaining promptly the pharmacotherapy that the public rightly regards as an essential component of health care. At the same time, Ontarians increasingly recognize that the affordability of prescription drugs is a valid concern for all health care payers. In other words, those responsible for managing tax-supported drug benefit plans and private insurance plans must strive for the most cost-effective use of prescription drugs as vigorously as consumers who pay for medications out of pocket.

In the three sections that follow (2.4 to 2.6) the role of government with respect to these objectives is discussed in greater detail.

However, it is important to note that in Ontario, as in Canada generally, there is no clear consensus regarding the limit of the responsibility of our provincial and federal governments with respect to health care, including prescription drugs.

To what extent are health care professionals rather than governments responsible for the quality of the health care received by Canadians? What role do governments legitimately have in regulating dentistry, medicine, nursing and pharmacy which traditionally have been self-governing professions?

What about the public; do consumers share responsibility for maintaining health and for treatment decisions? To what extent should consumers who can afford it contribute to the cost of their treatments?

What is the appropriate role of government in relation to private industry in the health care field? Should pharmaceutical manufacturers and distributors (and other suppliers of necessary health-related products) be subjected to more stringent regulations and be held to higher ethical standards than business generally? In our free market economy is more government control of the health related industry justifiable?

A systematic examination of these issues is clearly beyond the mandate and expertise of this Inquiry. However, in our work we have been well aware that they cannot be ignored and that important decisions related to our mandate have to be made even before a clear public consensus can be reached. Therefore, in formulating our recommendations to the Ontario government, and to government-related and government-funded organizations, we have not held back from taking positions related to these issues. We recognize that some of these positions may be contrary to the existing policies of professional bodies and the government of Ontario. However, these policies are in a state of evolution as our health care system continues to be the object of close scrutiny. We have reason to hope, therefore, that as the recommendations contained in this report are considered on their own merit, deviation from current professional or government policy will not create obstacles to their implementation. Indeed, we hope that they will contribute to the further evolution of public policy related to health care in Ontario and Canada.

2.4 Assuring Drug Quality

Prescription drugs are unlike most commercial products. Ordinarily consumers are able to evaluate items for sale in relation to their needs or preferences; no special expertise is required and only a degree of protection by legislation and government regulation is needed. By contrast, prescription drugs (and indeed many drugs that currently do not require a prescription) are powerful chemicals whose value, price, benefits and risks cannot be critically evaluated by most consumers. We therefore depend upon highly trained health care professionals, such as physicians and dentists, to determine when we need such potent chemicals, and rely on pharmacists to dispense them. In that more than 5,000 different pharmaceutical products are currently licensed for sale in Canada, consumers must rely on these professionals to select those drugs that are most likely to benefit them when they become ill.

However, practising health care professionals themselves do not have the resources or the expertise to evaluate the safety, efficacy and cost effectiveness of all pharmaceutical products. They must rely on experts in chemistry, biochemistry, toxicology and pharmacology to provide this information and keep them up to date with respect to changes in this rapidly moving field.

In Canada, as in most countries, the national government has the responsibility of licensing drug products once their safety and efficacy has been established. This task is performed by the Health Protection Branch (HPB) of Health and Welfare Canada, in Ottawa. However, the Ontario MOH subjects drug products to further scrutiny with the advice of the Drug Quality and Therapeutics Committee (DQTC). While the federal HPB confirms that drugs licensed in Canada are safe and can be beneficial in relation to the indications for their use, the Ontario government agencies

have gone further in seeking to assure that those drugs listed in the ODB formulary are worthy of reimbursement. Those drug products considered to be interchangeable because they produce the same effects are identified. (These issues are discussed in detail in chapters 4 and 5).

However, it is possible that the Ontario government does not go far enough. Prescribers are still expected to be familiar with a large number of drug products of variable effectiveness and cost and tax-supported reimbursement under the drug benefit plan still occurs even when the benefit-risk and benefit-cost ratios for some prescribed products are not as favourable as for alternative products available.

The Ontario government has the tools needed for this task. The ministries of Health and Colleges and Universities have budgets which can be applied to promote needed research and educational initiatives in Ontario's five health science centres. These can greatly influence the behaviour of prescribers (physicians and dentists), dispensers (pharmacists) and those who administer drugs (nurses).

The professional colleges can be asked to review regulations that relate to relevant professional standards and practice, the interaction of professionals and the pharmaceutical industry, as well as standards for distributors of drugs. The MOH, in association with the professional associations (such as the Ontario medical, nurses' and pharmacists' associations) can sponsor public education campaigns to promote rational use of both prescription and non-prescription drugs. The MOH can use its legislative authority and regulations to establish more stringent criteria for the listing and reimbursing of drug products.

2.5 Assuring Appropriate Access

The appropriate use of prescription drugs is an integral part of high quality medical care. When the foundations of Canada's much admired health care system were laid in the Hall Commission report of 1964, prescription drugs were intended to be included in a comprehensive, publicly supported health care plan. However, as Ontario and the other provinces entered into agreements with the federal government to implement the 1968 Canada Health Act, out-patients' prescription drugs were not included as benefits.

From the point of view of optimal health care this was not a logical decision. It is true that the most severe illnesses are primarily treated in hospitals, where pharmacotherapy is included as a benefit. However, follow-up drug treatment after discharge from hospital, and out-patient drug treatment for people who are ill but do not need hospitalization, can be as important as other interventions— for example, out-patient surgery—that are covered.

Quite properly, Ontario and other provinces have instituted various programs during the past 25 years to extend tax-supported coverage to persons who need out-patient drugs but cannot afford them (see section 3.1). At present almost 20 per cent of Ontarians are covered by the ODB plan and other provincial or federal programs. A further 65 per cent have third-party, private insurance, largely through their employment (see section 5.3). It is often assumed that the remaining 15 per cent of Ontarians have either chosen not to purchase insurance that covers out-patient drug costs, or feel they can afford to pay for these out-of-pocket when they are needed.

Unfortunately, this is not always the case. Persons under 65 who are employed and do not receive public assistance are not eligible for ODB benefits, even when their income is very low. When they have high, unexpected or

chronic drug costs the result can be catastrophic. Some persons with serious long term illnesses or disabilities do not qualify for insurance by the private plans available and others, who have insurance, can quickly exhaust their benefits and also suffer catastrophic costs.

It is the view of the Committee that our federal and provincial governments have an obligation to ensure that the basic values implicit in the Canada Health Act are implemented with respect to appropriate pharmacotherapy as well as other health care services. These values include access to these services, including prescription drugs, by all Canadians who need them. The Committee considers it unacceptable that some Ontarians do not have ready access to necessary pharmacotherapy at a time when prescription drugs are provided under ODB to some Ontarians who could afford to pay for them directly or by purchasing insurance. Certainly other health care services, that are no more important, are universally available.

We believe that the Ontario government has an obligation to rectify this situation, and this is reflected in our recommendations in this regard. As long as public policy under the Canada Health Act involves the provision of universal, comprehensive publicly supported and administered health care services, the ideal would seem to be to cover all necessary out-patient drug costs—as in-patient costs are covered—for the entire population. If this is not affordable, it seems logical that we should at least live up to the spirit of the Canada Health Act by ensuring that all Ontarians who need prescription drugs but cannot afford them are covered, even if it means that some who are already covered but could afford to pay are required to contribute a co-payment for out-patient prescription drugs.

It is important to note that public coverage for out-patient prescription drugs has never been universal in Ontario. Initially a select group of persons over 65—those who received social assistance—were beneficiaries of the provincial drug program. This changed in 1975 when coverage was extended to all seniors. Most Ontarians under 65 have never been covered. Therefore, to institute a co-payment for out-patient prescriptions, with an exemption for those who cannot afford it, is not a violation of the principle of universality.

2.6 Assuring Affordability

Although the Canadian health care system is widely admired, a number of strains in the system have become apparent in recent years. The most important of these relate to affordability. As health care costs rise faster than other components of the cost of living in Canada, and as provincial governments shoulder an increasing proportion of these costs, health care assumes an even larger proportion of provincial budgets, threatening other desirable social programs and the wealth creating programs that make them possible.

The threat to the integrity of our health care system is obvious; the challenge is to address the problem of rising health care costs without undermining the system itself — as has happened in other countries— and without abandoning the principle of universal access to necessary and high quality health care.

Although governments have the principal responsibility of ensuring that public funds are spent wisely others, including health care professionals, managers of health-related industries (such as pharmaceutical manufacturers and distributors) and the public itself share this responsibility. Unless each of these groups is prepared to accept its portion of this shared responsibility, there is grave risk that the excellent health care system, of which Canadians are so proud, will be eroded by an unacceptable reduction in quality or will be so distorted by unwise cutting of entitlements that its basic values will be lost.

With regard to the mandate of this Inquiry, the Committee became convinced that each of the interest groups must contribute to making optimal pharmacotherapy for Ontarians possible. As we indicate elsewhere, optimal pharmacotherapy is affordable, high quality pharmacotherapy.

The Ontario government must take the lead in promoting cost-control that protects rather than erodes excellent health care and must use all its influence and authority to achieve this objective. Legislation, licensing policy, regulations, selective funding of programs, use of purchasing power, taxation, and public education are all levers that can be applied by government. We believe that they should be employed judiciously but boldly to protect the essence of our health care system by keeping it affordable.

It is important that the public remains aware of the complexity of this task. What is needed is system-wide planning and carefully designed and evaluated pilot projects rather than ad-hoc decisions and the premature application of untested innovations. Since prescription drugs are only one of the factors that influence health status, policies designed to improve drug quality and reduce cost must be evaluated with regard to their impact on other aspects of health care.

Since governments are always under pressure to respond to unexpected problems that arouse public concern, it is difficult for them to establish long term strategic plans and to adhere to them. The task of government is rendered more difficult when evaluation of the cost-effectiveness of components of the system, such as prescription drugs, is added to the work load.

Nevertheless, we believe that the MOH must accept this challenge to an even greater extent than it does now. But this cannot be done without meaningful ongoing consultation with health care providers, health care-related industry and consumers. A coalition of the interested parties is essential. Adversarial relationships in the health care arena are rarely constructive and, for the most part, are self defeating.

Therefore, it is important that the Ontario government seek consensus on the need for responsible cost-control in the interests of preserving a worthwhile health care system. In this report we make a number of recommendations which, if implemented, should result in a substantial reduction of the cost of government drug programs without a reduction in the quality of pharmacotherapy. Indeed, we believe that their adoption will result in better care. Our recommendations ask each of the major interest groups—health care professionals, manufacturers, the government and the public—to give up something in return for a greater good that will not only contribute to protecting the health care system but will also, in the long run, serve the strategic interests of each group.

Chapter III
Prescription Drug Programs in Ontario

This section briefly describes the evolution of prescription drug programs, including federal and provincial government initiatives to ensure that Canadians and Ontarians have access to quality drugs at reasonable prices (see appendix 3.1, page 32.) Events leading up to the initiation of the Ontario Drug Benefit (ODB) program, its current organization, and an analysis of ODB expenditures are presented. Lastly, this section provides a summary of other provincial drug benefit programs as a basis for comparison.

3.1 Origin and Growth of Drug Benefit Programs

The impetus for drug benefit programs originated from government concern that residents of Ontario were not receiving necessary medications because of financial barriers. Although access to prescription drugs for those requiring financial assistance has improved over the years, a number of federal and provincial initiatives were intended to influence the quality and cost of medications to Canadians. Despite these efforts and the availability of private insurance plans, the provincial government decided (several years after installing the health insurance program) to address the issue of access once again. It was at this time that the ODB program was initiated.

3.1.1 Access to Prescription Drugs in Ontario

Public funding in Canada for prescribed drugs began in 1957 with the federal Hospital Insurance and Diagnostic Services Act. When the Act became operative on July 1, 1958 only five provinces had entered into agreements with the federal government. By January 1, 1959, Ontario (along with Nova Scotia and New Brunswick) followed suit. This agreement resulted in a hospital insurance program, the costs of which were to be shared equally by the federal and provincial governments. Under this program, insured medical services in hospital included prescribed drugs.

In 1962, the Ontario government introduced two programs under the General Welfare Act — special assistance and supplementary aid — to provide financial assistance for prescription drugs to general welfare and family benefits recipients. Although funding was to be shared by both the provincial government and the municipalities, eligibility and benefits were determined by individual municipal governments. The resulting uneven program standards across municipalities became a major consideration leading to the establishment of a provincial drug benefit program.

In addition to publicly sponsored hospital programs and special arrangements for persons requiring social assistance, private health insurance policies also assisted with the drug costs for a significant number of individuals. Insurance agencies (such as the Ontario Blue Cross) extended health care plans to cover drug expenditures on a cost-

sharing basis. In 1957, Prescription Services Inc. established the first private prepaid drug plan in Ontario (known as the Green Shield Plan). These plans were generally directed to employees; at present, fewer than 1 per cent of Green Shield's subscribers are covered through policies purchased as individuals.[1]

In 1964, the federal Royal Commission on Health Services chaired by Chief Justice Emmett M. Hall made far-reaching recommendations designed to ensure access for all Canadians to the best possible health care. The Hall Commission recommended that prescribed drugs be included as a benefit of the proposed universal health insurance program. This conclusion was based on the assumption that drug therapy is an important component of health care, and on evidence that for the average Canadian family, the burden of drug expenditures was almost as great as paying physicians' bills. The information available at the time showed expenditures on prescribed and non-prescribed drugs in Canada in 1961 to be $364 million; expenditures in the same year for physician services were $383 million.[2] The Hall Commission noted that the "incidence of drug expenditures is to some extent predictable, particularly in average terms for certain age groups (the elderly). On the other hand, it is difficult to foresee the incidence of very heavy drug costs, for serious illnesses that may strike at random."[3]

The Hall Commission concluded that despite hospital prescription drug coverage, assistance to persons on social assistance, and the availability of third party insurers, public concern about drug costs remained high. The Commission therefore endorsed the inclusion of outpatient prescription drugs as a publicly insured benefit and considered some form of monetary participation by the patient. The experience in other jurisdictions (New Zealand, Australia, Norway, Denmark, the Netherlands, Britain) and in Canada (Saskatchewan), pointed to increased utilization when a public program finances prescription drugs. The Commission recommended a $1 contributory payment for each prescription with the exception of those individuals on long-term therapy. Such direct patient contribution was viewed as "a means of encouraging responsible use of drugs."[4]

Shortly thereafter, the federal government enacted the Canada Health Act (1968) which established a national health insurance program. However, contrary to the Hall recommendation, prescription drugs were not included as a benefit.

As a result of the exclusion of prescription drugs from the national universal health insurance plan, access to quality prescription drug products, and their cost, continued to be major governmental concerns in Ontario.

3.1.2 Quality and Cost of Prescription Drugs in Ontario

As early as 1960, the provincial government had set up a Select Committee of the Legislature to examine the cost of drugs in Ontario. This Committee issued its final report three years later, observing that the "Ontario Department of Health (now the Ministry of Health, or MOH) which purchases the drugs used in its mental institutions and sanatoria is the largest single purchaser of drugs in Ontario."[5] Consequently, the committee believed that the government ought to be able to ensure a high level of quality and reasonable prices for such

1 Hurlet, J. An examination of access to prescription drugs in Ontario and an evaluation of selected cost sharing policies.
2 Hall, E.M. (Honorable). *Royal Commission on Health Services*, Vol. II, Toronto, Ontario, p.55.
3 Ibid., p.555.
4 Op. Cit., p.565.
5 Hon. H.L. Rowntree, Q.C. *Report of the Select Committee of the Ontario Legislature*, 1962 p.46.

products. A drug testing laboratory, and use of generic products wherever possible, were major recommendations and the idea of a central government pharmacy was raised.

3.1.2.1 PARCOST: In 1968, the government of Ontario introduced the PARCOST (prescription drugs at reasonable cost) program to provide the public and health professionals with information on the quality and price of drugs. Not only did the provincial government initiate testing of generic products through its drug testing laboratory, it also allowed for inspection of the premises of manufacturers of selected drugs. As the report of the 1973 task force which reviewed the PARCOST program stated: "The intention of these efforts was to provide assurance to doctors, pharmacists and other prescribers and purchasers that some less expensive preparations are safe and potent and could be prescribed and dispensed with confidence in their quality."[6]

A major component of the program was the comparative drug index (CDI). Pharmacies participating in PARCOST agreed to dispense and charge the CDI listed price of products, plus a negotiated dispensing fee, on a voluntary basis. Preliminary surveys conducted by the MOH indicated that physicians lacked confidence in the quality of inexpensive drugs at a time when several new pharmaceutical manufacturers were adding to the proliferation of pharmaceutical products on the market. While they were intended to compete with existing products, uncertainty arose due to some treatment failures involving these new products.

To overcome this lack of confidence, the government decided that an independent committee of experts be struck to ensure the quality of Ontario drug products. Since that time the Drug Quality and Therapeutics Committee (DQTC), which includes specialists in the fields of medicine, pharmacy and pharmacology, has acted as an independent advisory group.

The first CDI, which listed drugs recommended by the DQTC, was published in 1970. It listed comparable pharmaceutical products of assured quality in order of price.

Using a common antidepressant drug as an example, multiple-source products were listed in the following manner:

64 Psychotherapeutic Agents

Product Name	Manufacturer	Cost per Tab
Amitriptyline 50 mg		
Elavil	MSD	12.5 cents
Deprex	M&M	7.7 cents
Levate	ICN	4.4 cents

This first edition of the CDI was judged to be "a quality control manual"[7] because products were not deemed as interchangeable, nor were the pharmacist or physician exempt from liability should a brand other than that prescribed be dispensed. Following recommendations of the Porter report (1971), subsequent CDIs addressed the issue of therapeutic interchangeability, and included the following statement: "The DQTC considers those 'interchangeable drug products' listed under the same non-proprietary name to be therapeutically interchangeable except where indicated otherwise by the words 'not interchangeable'."[8]

Despite efforts to ensure confidence in the concept of interchangeability, the task force which reviewed PARCOST found that this concept continued to meet strong opposition.

6 Ontario Council of Health, *Review of the Ontario Parcost Program*, Toronto, Ontario, 1973, p.4.
7 Porter, J. *Report of the Review Committee on Prescription Product Substitution*, Toronto, Ontario, June 1971, p.5.
8 See PARCOST/CDI, Jan. 1985. This also includes the statement where interchangeable phamaceutical product(s) means a product containing a drug or drugs in the same amounts of the same active ingredients in the same dosage form as that directed by a prescription.

The report specifically identified advertising and promotional efforts by sales and technical representatives of major drug manufacturers and the Pharmaceutical Manufacturers Association of Canada (PMAC) as the major influences generating this opposition. The thrust of this activity was to "cast doubt on the efficacy of the less expensive products listed in the CDI as interchangeable with the more expensive ones provided."[9] Nevertheless, the task force reported that it was "satisfied that the Drugs and Therapeutics Branch and its advisory committee are using the best available and modern methods for evaluating drugs admitted to the PARCOST comparative index, and are using admirable and objective judgement in approving or rejecting candidates for listing in the CDI."[10] Indeed, the report stated that the PARCOST program, by assuring the quality of lower-cost comparable prescription drugs, and promoting their use, saved the Ontario public over $5 million in 1972.

3.1.2.2 Amendments to the Pharmacy Act: The next significant policy action was taken by the Ontario government in 1972, following recommendations issued in the Porter report. The concept of product selection or interchangeability was embodied in amendments to the Pharmacy Act. The objectives of this piece of legislation were to allow physicians and pharmacists to prescribe and dispense interchangeable products listed in the CDI, to ensure that the consumer is provided quality products at the lowest possible price and to remove the liability from pharmacists and physicians for complying with the legislation. The significance of this piece of legislation was to support the objectives of the CDI since according to J.R. M. Gordon "publishing a list of interchangeable drug products without having legislation allowing selection and substitution and protection from liability would considerably weaken the program."[11]

One weakness of the legislation at that time, outlined in the Gordon Commission report, was that while it proved effective for the ODB market, it did not have the intended effect on the non-ODB market. One of the reasons for this weakness was that while there was mandatory product selection for ODB prescriptions, this was not the case for non-ODB prescriptions. Therefore, when a PARCOST pharmacy product-selected a non-ODB prescription, the PARCOST fee applied; if the same pharmacy chose not to product select, then reimbursement was provided for the price of the product set out in the CDI, plus the PARCOST dispensing fee. Pharmacies not participating in PARCOST were under no obligation with respect to dispensing fees and could charge the customer for the price of the product listed in the CDI, plus a usual and customary fee. The discrepancy in fees acted as a disincentive for pharmacies to participate in the voluntary PARCOST program.

At the same time that the province was making major policy decisions about the quality and prices of prescription drugs, the federal government took steps to encourage price competition in the retail drug market. This was achieved through supporting the growth of a generic manufacturing sector by amending the Patent Act in 1969 to allow compulsory licensing to import patented pharmaceutical products.[12] A year later, the federal government commissioned a task force[13] to report on the cost of health services in Canada. Among other issues, the task force examined the assertion that drugs are sometimes prescribed too often and too copiously and concluded that the Canadian Medical Association be requested to formulate guide-

[9] Ontario Council of Health, *Review of the Ontario Parcost Program*, Toronto, Ontario, 1975, p.9.
[10] Ibid., p.15.
[11] Gordon, J.R.M. Report of the Commission on the Pricing of Multiple-Source Drug Products in Ontario, Toronto, Ontario, August 1984, p.45.
[12] Section 41(4) of the Patent Act provides for compulsory licensing to import patented pharmaceutical products. A royalty of 4 per cent of the licensee's selling price of the patented product is levied on firms taking out licenses. In 1985, compulsory licensing in Canada resulted in a savings of $211 million on prescription drugs sold in Canada. See the report of the Commission on Inquiry on the Pharmaceutical Industry for this information.
[13] National Health and Welfare, *Task Force Report on the Cost of Health Services in Canada: Summary*, Queen's Printer, Ottawa, Ontario, 1970, p.4.

lines for the rational and practical prescribing of drugs; that drugs should be licensed and approved on the basis of effectiveness as well as purity and safety; and that the variety of formulations and sizes of drug products approved for sale be limited to those for which there is demonstrated need. In 1971, the federal government initiated the drug quality assurance program (QUAD) which generated information on drug quality, prices and testing and on manufacturing standards.

Although these initiatives underscored the commitment of both the federal and provincial governments to providing quality drugs to all Canadians at reasonable cost, the fundamental issue of financial access to necessary prescription services was not resolved. For this reason, the provincial government next inaugurated a number of programs to address the gaps in funding for individuals and families with unusually high drug expenditures.

3.2 The Introduction of the ODB Program

In 1974 the provincial government took the major step of introducing the ODB program. This program was originally established to provide free drugs to senior citizens eligible for the provincial guaranteed income supplement program for the elderly (GAINS) and to recipients of other government social assistance programs. In 1975, this program was expanded to include all residents of Ontario 65 years of age and over. Eventually, the eligible population receiving benefits from the two municipal programs mentioned earlier (special assistance and supplementary aid) was also transferred to the ODB program.

Eligible benefits were listed in the ODB formulary. The format of listings differed from the PARCOST CDI in that only the lowest price of multiple-source products was provided. This price was the maximum allowable for reimbursement to the pharmacist. If the manufacturer of the product distributed more than 51 per cent of its total line of products through a wholesaler, then the pharmacist would be reimbursed the maximum allowable cost plus 10 per cent for distribution costs. The following is an example taken from the first ODB formulary of September, 1974:

28:16.04 Psychotherapeutic Agents
Antidepressants

Amitriptyline 50 mg tab

009478	Levate	ICN	0.0440
018341	Deprex	MOM	
016349	Elavil	MSD	

In 1976, the ODB formulary and the CDI (hereafter referred to as the formulary) were combined to serve both the ODB-eligible and the general population. The formulary effectively set a ceiling price for multiple-source drugs; product selection was encouraged by publishing the highest amount that the government would reimburse the pharmacist for the drug product in question (i.e. the published price of the lowest-priced equivalent product available). The role of the DQTC was significant; it included recommending the drugs to be admitted to the formulary, assuring the quality of these products, and determining which drugs were interchangeable (see section 4.2).

Maintaining the economic viability of the ODB program became a challenge by the early 1980s. A number of pressures within the health care system prompted legislation to empower the government to manage and more closely control the drug programs.

Specifically, there were concerns that "price-spreading" was undermining the ODB program and this practice was carefully examined by the Gordon Commission established in 1984.[14]

3.2.1 The Price-Spread

As early as 1971, when the Porter Committee submitted its report entitled the "Review of Prescription Product Substitution," the possibility of price spreading was identified. It worked in the following manner: even though a particular product was listed as the lowest in price, the pharmacist was tempted to dispense the one that was in stock and requested permission to substitute for this brand. There was the tendency to fill prescriptions for generic drugs with higher priced products because some companies were listing prices for smaller package sizes of their brands in the CDI while selling larger quantities to the pharmacy at a cheaper price. With this incentive, the pharmacist was tempted to use the spread in price to advantage by dispensing those products.[15]

The following hypothetical example illustrates price spreading:

	Formulary Listed Price	Pharmacy's Acquisition Cost
Any Drug Brand A	$10.00	$9.00
Generic Drug X	8.00	4.20
Generic Drug Y	7.00	4.00

A brand name drug "A" is listed at $10 together with two generics, X and Y, at $8 and $7 respectively. In this hypothetical example, the real price to the pharmacy of the competitive generic drugs X and Y is in the $4 range. Even though the acquisition cost of Y is less than X, it is to the pharmacy's advantage to stock X because the price spread ($3.80) is greater than for Y ($3). Since for non-ODB prescriptions involving product selection (that is, the cash market), the pharmacist selects products on the basis of the lowest price *in inventory*, the pharmacy chooses not to stock generic drug Y. While the pharmacy is only reimbursed the lowest price ($7) for ODB customers, the price spread is still $2.80 for an ODB sale. Overall, the net profit for the pharmacist is still highest if only brand X is stocked.

"This practice leads to a marketing strategy for generic drug companies competing for a higher listing (as close to the original brand price as possible) to maximize the price spread while continuing to sell at the $4 market place price. The system encourages a generic manufacturer to avoid being the lowest price drug listed. Thus, the cost of both ODB and non-ODB prescriptions is increasing while the actual acquisition cost to the pharmacy is, in some cases, decreasing."[16]

The MOH estimated that the difference between the lowest price in the ODB formulary and actual drug costs to the pharmacist was $14.4 million in 1983. This amounted to some 5 to 6 per cent of total ODB expenditures and represented a major cost to the public.

After two significant reports on the structure of the ODB program, namely the Bailey report and the Gordon Commission report, the province continued to investigate ways to rationalize the program. Two major pieces of legislation were eventually enacted in 1986: the Ontario Drug Benefit Act (the ODB Act, or Bill 54) and the Prescription Drug Cost Regulation Act (the PDCR Act, or Bill 55). Not only do these two Acts reinforce Ontario's

14 Gordon, J.R.M. *Report of the Commission on the Pricing of Multiple source Drug Products in Ontario*, Toronto, Ontario, August 1984.
15 Porter, J. Report of the Review Committee on Prescription Product Substitution, Toronto, Ontario, June, 1971, p.14.
16 Quoted from a submission to Dean J.R.M. Gordon, Commissioner, *Report of the Commission on the Pricing of Multiple source Drug Products in Ontario*, Toronto, Ontario, 1984.

commitment to product selection, they also address the government's concerns about growing ODB expenditures.

3.2.2 Bills 54 and 55

Bills 54 and 55 were proclaimed and put into force on December 1, 1986. Bill 54 gave the government "the clear legislative authority to manage the Ontario drug benefit program efficiently."[17] Bill 55 was expected to ensure that "all consumers get the information they need to make informed and economical drug purchases."[18] Although a number of the features are derived from recommendations made by Bailey and Gordon, they are nevertheless important to enumerate.

The ODB Act introduced the following changes:

- A negotiated maximum dispensing fee was established with provisions for change dependent upon on-going dialogue with concerned parties. The legislation outlined the negotiating framework for determination of government reimbursed fees.
- The amount of the drug cost to be reimbursed by the government was based on the best available price (BAP) concept plus 10 per cent. The legislation also gave the government discretion at setting BAP; BAP was not restricted to information provided by manufacturers' submissions but could be defined according to drug prices available in Canada. The MOH could also inspect the records of manufacturers, wholesalers and pharmacists to ensure that accurate price data were submitted.
- The requirement of the dispensing limit was extended from 30 to 250 days, thereby encouraging the pharmacist to dispense the quantity prescribed.

The following are features of the PDCR Act which differ from the ODB Act:

- More information is to be provided by the pharmacist to the consumer on the availability of a lower-cost substitute; the prescription receipt must distinguish the cost of the drug and the dispensing fee; and the dispensing fee for interchangeable drugs must be posted.
- The drug cost for interchangeable products is limited to the price (i.e. BAP) listed in the formulary plus 10 per cent "to cover distribution costs and differences in purchasing volume."[19]
- There are no restrictions on setting fees for the non-ODB market (other than those found in professional regulations.)

Both bills enable the government to inspect the records of both manufacturers and pharmacies and also to levy penalties on pharmacists and corporations if any of the regulations are contravened.

These two major pieces of legislation did not get passed without major opposition. Prior to the Acts being passed, the Ontario Pharmacists' Association (OPA) initiated an ad campaign against the proposed bills. The association was particularly concerned with the changes to the dispensing limit, the process for fee negotiations and the regulatory mechanism which allows inspectors to enter pharmacies and seize records to ensure compliance with the legislation. According to Dr. P. Gorecki of the Economic Council of Canada, who has prepared a report for the Inquiry (see appendices, volume II), the fee negotiation process has not made agreement on an appropriate fee any easier; it has made a positive step toward determining the approach to be taken to set the fee. Data analyzed by Gorecki shows that there has

[17] Ontario Ministry of Health News Release, 86-nr-251a, *Drug Legislation Proclaimed Law*, December 1, 1986.
[18] Ibid.
[19] Op. cit.

been little effect from the 'dispense as written' policy; prescriptions continue to be written in relatively small quantities repeated frequently.

The pharmaceutical manufacturing industry viewed the actions taken by the provincial government over the last decade as undesirable government intervention into the marketplace. Submissions by the PMAC and several of its members to the Inquiry attest to this. For example, the brand name pharmaceutical manufacturers view the formulary submission process performed by the DQTC as an unnecessary duplication of the function served by the Health Protection Branch in Ottawa;[20] they also believe that by merging the CDI and the ODB formulary, the provincial government, in effect, controls a major proportion of the Ontario drug market. One consequence of this is that being listed in the ODB formulary became a marketing objective for many manufacturers.

In contrast, we reported in our second quarterly report that *not being listed* in the ODB formulary may have been a 'loophole' which permitted manufacturers to avoid generic competition.[21] This concerned the growth in special authorizations; by becoming eligible for reimbursement as a special authorization under Section 8(1) of the ODB Act, the manufacturer avoided the conditions of interchangeability for the purposes of reimbursement.

Considerable debate continues as to the merits of the legislation and there is concern over using BAP as a price setting mechanism. The innovative pharmaceutical industry regards this system as favouring generic companies.[22] The OPA, on the other hand, is in agreement with the BAP plus 10 per cent concept, but prefers that BAP be based on realistic package sizes.[23] The OPA would also like to see a more dynamic formulary which would encourage more realistic prices.

Section 18 (2), (3), & (4) of the ODB Act 1986 specifically addresses the issues of BAP and the 10 - 20 per cent upcharge. Prior to this legislation, there was an allowance for wholesale distribution costs by adding 10 per cent to the base price listed in the formulary. The Inquiry has been made aware that the modification in the application of the 10 per cent has had a detrimental effect on pharmaceutical drug wholesalers.

The Canadian Wholesale Drug Manufacturers Association stated in its submission to the Inquiry that: "The 10 per cent pharmacy purchasing advantage negotiated by the Ontario Pharmacists' Association and provided in the new legislation has nothing to do with the traditional distribution cost allowance (10 per cent). The former is applicable at the retail level for whatever purpose the Ministry had in mind. The latter was previously allowed by the Ministry as an addition to the base price in the formulary, which, in effect, is the price of the product at point of use. Today the pharmacist takes the 10 per cent purchasing advantage as being totally his.

"The Ontario government has agreed to pay the cost of distribution for products sold direct because this cost is already built into the direct manufacturer's (i.e. the manufacturer that sells directly to the retailer) price. However, our Ministry of Health, does not recognize this same charge if delivery of the goods is handled by a wholesaler/distributor."[24]

[20] Brief by Rhone-Poulenc Pharma Inc. #24-3200.
[21] Pharmaceutical Inquiry of Ontario, Second Quarterly Report, August 1988, p.8.
[22] Op cit. Rhone-Poulenc Pharma Inc. #24-3200.
[23] Brief by Ontario Pharmacists' Association. #43-3100.
[24] Canadian Wholesale Drug Manufacturers Association, Submission #2-3100 pp. 4-5.

3.3 Current Situation

Currently, the payors for prescribed drugs in Ontario consist of the provincial government, private insurance companies and consumers. The federal government provides prescription drug coverage to status Indians and Inuits, war veterans[25], Canadian Forces personnel, the RCMP and inmates of federal jails.

Prescribed drugs are a benefit while in-hospital, and the provincial government supplies drugs free of charge to eligible beneficiaries. Although the largest program is ODB, the MOH also funds additional programs for drugs, nutrients and assistive devices. There are also a significant number of private insurance plans with varying drug coverage and customer cost-sharing. These plans are usually provided as part of employment benefits. Best estimates indicate that 15 per cent of the Ontario population does not have some form of prescription drug insurance coverage.

3.3.1 Current MOH Drug Programs

The role of the government in the prescription drug market has grown significantly over the past several decades. As table 3.1 shows, government expenditures on prescription drugs are estimated to be almost 50 per cent of total sales of prescription drugs in Ontario.

Table 3.1

1988 Expenditure and Sales Estimates For Ontario: Prescription Drugs

Estimated sales of prescription drugs in Ontario	$1.2 billion
ODB expenditures on drugs	$360 million
Public hospital expenditures on drugs	$230 million

Drug programs are listed in table 3.2.

Apart from the ODB program (which will be described in greater detail below), the MOH also provides drugs and over-the-counter products through the Ontario Government Pharmacy Medical Supplies and Services (OGPMSS). The OGPMSS, or government pharmacy, is a centralized purchasing and distribution function of the MOH which distributes to provincial psychiatric hospitals, correctional institutions and facilities for the developmentally handicapped. A more in-depth analysis of this aspect of the acquisition of drugs by the province is provided in chapter 6.

The MOH funds clinics for confidential treatment and counselling of sexually transmitted diseases (STDs). Drugs used by these clinics for the treatment of STDs are provided free of charge through government pharmacy. Funding is also provided for drugs prescribed by a private physician to a patient for treatment of STDs. The cost of these drugs is usually reimbursed by the municipalities.

Since 1982, the responsibility for treatment of tuberculosis rests with the family physician rather than through clinics. Physicians treating patients and their contacts usually obtain the drugs through local health units, which in turn request them from government pharmacy.

MOH also funds drugs provided through public health units for the treatment of leprosy as well as specific drug products for use in ambulance services under two programs called "basic life support" and "advanced life support." The assistive devices program offers financial assistance for devices with 25 per cent cost-sharing by the patient.

[25] Pensioners and recipients of certain allowances and benefits.

Table 3.2
List of MOH Funded Programs for Drugs, Nutrients and Assistive Devices

Program Name	Source of Payment	Means of Funding	Benefits	Est. Popn.	Est.Cost Per Patient	Legislative Authority	Comments
Ontario Drug Benefit Program OAS/GAINS Home Care Home Spec Care Extend Care Chronic Care *Vocat Rehab *Oral Hypoglyc Genl Welfare Family Benefits	ODB Kingston	MOH-ODB	Drugs listed in ODB/CDI Formulary	1,492,940	$370./year	ODB Act/ PDRC Act	*Currently being phased out
Authorizations Under ODB Act	ODB Kingston	MOH-ODB	Oxygen, Allergens Inter. non-form benef "limited use" prod Nutrit Supplements Moisturizers, vehicles, bases	n/a	n/a	ODB Act Sect. 8	
Ontario Govt. Pharm Med Supplies & Services (OGPMSS) Psych Hospitals** ComSoc Facilit Correct Facilit	OGPMSS invoices each institution	MOH Supply & Services	Drugs & Medical Supplies listed in OGPMSS catalog	100,000*		MOH Policy	*Includes some ODB recipients
Homes for Aged Nursing Homes Resid Homes		MOH-ODB	ODB Approved - Non Prescription Drugs				**Includes out-patient medication programs
STD Program	OGPMSS invoices Public Health Branch	MOH Supply & Services	Drugs related to treatment of STD	29,317/annual (based on attendance at 43 clinics)	$70,578* (total drug cost for program-'88)	Health Protect & Promotion Act 1983	*Individual costs vary according to number of treatments
TB Program	OGPMSS invoices Public Health Branch	" "	Drugs related to treatment of TB	630 patients notified/year			Individual physicians place orders through branch
Leprosy Program	OGPMSS invoices Public Health Branch	" "	Drugs related to treatment of Leprosy				
Ambulance Serv							
Basic Life Support Program	BLS program	Directly funded by MOH	Specific drug products* (IV solution, saline, oxygen)				*Program administered by 5 services/some drugs ordered through OGPMSS
Advanced Life Support Program	ALS program	MOH funds base hospitals for supplies	Specific drug products				Physician at base hospital delegates responsibility for drugs to ALS trained personnel
Assistive Devices Program			75% of cost of -hearing aids -respiratory aids -communicative aids -visual aids -wheelchairs/mobility devices -ostomy supplies -incontinence supplies -prosthetic devices -orthotics				

Table 3.2
List of MOH Funded Programs for Drugs, Nutrients and Assistive Devices (page 2)

Program Name	Source of Payment	Means of Funding	Benefits	Est. Popn.	Est.Cost Per Patient	Legislative Authority	Comments
Hospital Based Out-Patient Programs							
End Stage Renal Disease -home dialysis	Global Budget Life Support	Global Budget Life Support	Drugs, Medical & Surgical Supplies	125	$20,000/year equipment $20,000	Health Insurance Act Regulation 93	
-cyclosporine	Life Support	Life Support to 9 transplant centres	Cyclosporine	2,400	$5,000/year	Public Hospital Act Regulation 863	
Hyperalimentation	Global Budget Life Support		Nutrients,equipment, Supplies and related drugs		TPN $60-$70/day Equipment $600/person	Health Insurance Act Regulation 93	
Hemophilia	Red Cross Hospital Budget	MOH funds Red Cross	Blood products, Syringes & equipment	757			
Cancer	-3rd party -Cash -Special Drug Service	MOH funds OCTRF clinics	Chemotherapy drugs		Varies/some are very costly	The Cancer Act Section 10	
Cystic Fibrosis	Invoiced	MOH funds out-patients through 9 existing CF clinics	Antibiotics Enzymes Bronchodilators Vitamins Solutions	860	$2,500/year (average)		Eligibility expanded as per Lowy recommendation
Thalassemia	Invoiced	MOH funds out-patients through 3 hospitals	Desferal, needles, Syringes Distilled water, Batteries, Pumps, vitamin C	125	$25,000/year		Eligibility expanded as per Lowy recommendation
In-born Errors of Metabolism	Public Health Branch provides funds to 5 treatment centres and the National Food Centre		-Total cost of special diets -Travel expenses to clinic	4-6/year or 1/25,000 births	Avg. $3,000/year $7-$12/day	None	
AIDS	MOH invoiced	MOH funds thru Sunnybrook Medical Centre	AZT, Pentamidine (aerosolized)	1,300	$10,000/year $300/year	Public Hospital Act Amendment to PHA & Health Insurance Act	
Human Growth Hormone	MOH invoiced		Growth hormone	175	$15,000/year	Public Hospital Act; Health Insurance Act	

Source: MOH document (Current Funding of Out-Patient Drugs & Nutrients)
Communication with individual programs or branches, 1989.

A significant number of hospital-based outpatient programs exist for the provision of drugs and other medically related products. Although some products (for example cyclosporin, products used for home dialysis, hyperalimentation and haemophilia) are funded through hospital global budgets or life support programs, the MOH has programs where the hospital invoices for product costs only (e.g. AIDS, cystic fibrosis, thalassemia and human growth hormone programs.)

In its second quarterly report, the Inquiry recommended that eligibility for drug coverage be extended to all persons in Ontario with cystic fibrosis and thalassemia. The MOH acted immediately to implement this recommendation. Previously, only patients under 18 years of age were covered under the program.

3.3.1.1 ODB Program: In its presentation[26] before the Inquiry, the MOH identified the mandate of the ODB program as: "assuring the interchangeability of drug products; the provision of quality drugs to all Ontarians at reasonable cost; and the need to consider the impacts of our drug programs on health status outcomes." This is discussed in detail in section 4.1.

For 1988-89, the drug programs branch budget amounted to less than 1 per cent of total ODB expenditures. Almost half of this is devoted to the administration of claims activity (43 per cent); more than a third is for general administration, policy and planning (35 per cent). The remainder is taken up by scientific activities (22 per cent).[27]

Eligible beneficiaries of the ODB program include: all senior citizens 65 years and older, all eligible recipients of family benefits, general welfare assistance, extended health care benefits, home care benefits, and residents of homes for special care. Participants in the program are eligible to receive prescribed drugs free of charge and benefits are established by the ODB formulary.

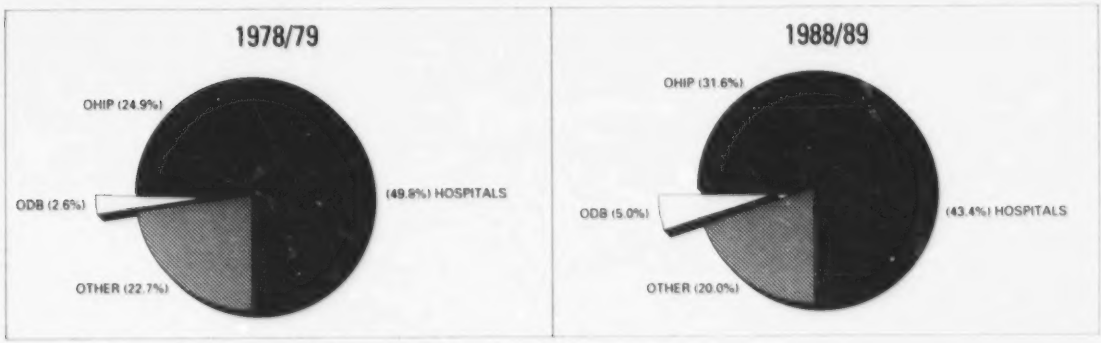
The Ontario Ministry of Treasury and Economics stated in *Economic Outlook and Fiscal Review: Ontario 1988* that the ODB plan has experienced an average annual increase of 20.4 per cent. These annual increases have made ODB "one of the fastest growing health care programs over the period [1978-1988]." In its subsequent report, the Ministry points to the declining federal share for health care as adding further pressure to the provincial budget.

In 1977, the established programs financing system was adopted to replace previous federal-provincial cost-sharing programs for health and post-secondary education. This new arrangement of block funding provided greater latitude for the provinces to manage their respective health care and post-secondary educational budgets. However, this arrangement also put an end to the unrestricted federal matching of contributions with provincial expenditures; federal contributions to provincial health care were capped at 1975-76 costs with provisions for annual increases based on a percentage of provincial GNP growth. In 1982, the revenue guarantee compensation was removed.[28] The result is that "federal support for Ontario health and post-secondary education programs has fallen from a peak of 52 per cent of provincial-local spending for these purposes in 1979-80 to under 38 per cent in 1989-90."[29] The current (1990) federal budget has now frozen the amount of the transfer payment for two years.

[26] Brief #36 3400, Oct. 17/88.
[27] Information taken from "Presentation to the Pharmaceutical Inquiry of Ontario on the Ontario Drug Benefit Program," May 5, 1988.
[28] Ministry of Treasury and Economics. *Economic Outlook and Fiscal Review:* Ontario 1989, Nov. 1989, p.85.
[29] Ibid., p.68.

3.3.1.2 Expenditure Profile of the ODB Program

Components of Health Care Spending: Ontario: 1978/79 vs. 1988/89



Source: Ministry of Treasury and Economics
Figure 3.1

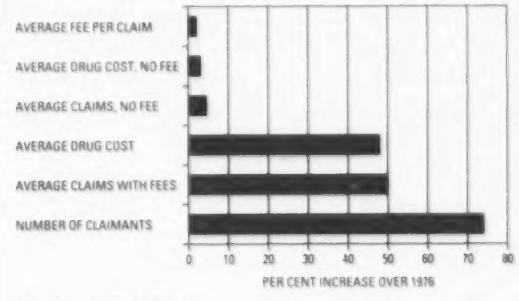
In 1978-79, the ODB program represented only 2 per cent of total health care spending; 10 years later, the program has increased to 5 per cent of the share of health care expenditures in Ontario (see figure 3.1). The increase over the 10 years is 508 per cent or approximately 20.4 per cent annually.[30]

The total paid for the ODB program was $637.9 million in 1988-89. These expenditures break down as follows:

	$Millions
Fees Paid	$197
Drug Cost	$441
Claims w/fee	$328.2
Special authorizations	$62.0
Claims w/o fee	$50.8
Total Paid	$637.9

Comparing the distribution of ODB costs for the years 1978/79 and 1988/89 (figure 3.2), the increase has been greatest for claims with fees. Fees are broken out separately and the figure shows that they now take a smaller proportion of ODB expenditures. This leads to the conclusion that the prescription drug component of the ODB expenditure requires further analysis to explain the increase; this analysis can be found in section 9.1.

Relative Contribution to ODB Increase 1976/77 to 1988/89
(Per cent increase over 1976, costs adjusted to 1988 dollars)



Source: Ontario Drug Benefits Reports

Figure 3.2

[30] See Economic Outlook and Fiscal Review, Min. of Treasury and Economics.

The Inquiry examined ODB utilization data for the period 1976 to 1988 and found that a number of factors were contributing to the significant increases in expenditures. As shown in figure 3.3, the major contributing factor is the increase in the number of claimants. This factor accounted for 74.3 per cent of the total increase in expenditures since 1976. Figure 3.3 indicates that the number of claimants over 65 years of age accounts for the greatest increase in claimants over the 12 year period. Claims through the Ministry of Community and Social Services represent roughly 20 per cent of ODB expenditures.

Numbers of ODB Claimants by Type of Program (1988/89)

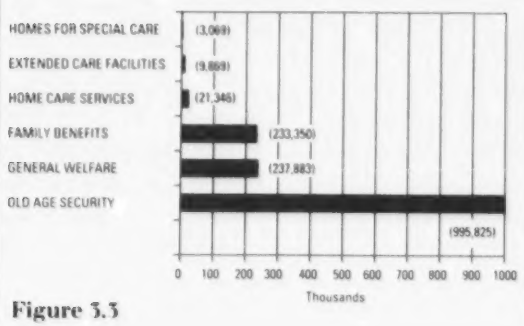


Figure 3.3

The next significant factor influencing the rising ODB expenditures is the average cost of claims with fee. This has had a 50.1 per cent impact on the increases to date. As noted earlier, the major influence on this increase was the average drug cost of the claims which was 48.4 per cent, while the average fee per claim was only 1.2 per cent.

However, the driving force behind the increase in the average cost of claims with fees is not known. While it is evident that cost of drugs is a major component, the data do not allow us to determine whether the actual cost of drugs has increased substantially, or whether utilization has intensified.

Further analysis of drug prices will be provided in chapter 5.

3.3.2 Private Drug Insurance Plans

The two private insurance companies with major drug insurance plans in Ontario are Green Shield Prepaid Services Inc. and Blue Cross. By extrapolation, private insurance companies in Ontario provide coverage to roughly 60 per cent of the population (with approximately 15-20 per cent covered by ODB and 15-45 per cent paying cash.)

As part of his report prepared for the Inquiry, Prof. J. Hurley of McMaster University investigated the impact of third party payors on access to prescription drugs in Ontario. Although considerable data were provided by both Green Shield and Blue Cross, Hurley found that the data did not provide significantly new information which would substantiate or refute the previously estimated percentage of the Ontario population that has some form of drug benefit coverage. This estimate stands at 85 per cent. In his report, he did identify a number of groups that may be facing financial difficulty in obtaining prescription drugs, namely: "Individuals with extraordinary drug expenses, those requiring special drugs, those only employed part-time, and other subgroups who do not qualify for the ODB program or for private third party coverage."[31]

[31] Hurley, J. "An Examination of access to prescription drugs in Ontario and an evaluation of selected cost sharing policies." Report to the Pharmaceutical Inquiry of Ontario. Oct. 13, 1989.

3.3.3 Ministry of Community and Social Services

Many of the presentations and submissions to this Inquiry addressed problems of access to financial assistance for Ontarians experiencing catastrophic drug costs. Several individuals and organizations came forward[32] and expressed specific concerns regarding financial access to prescription drugs. The Social Assistance Review Committee (SARC, 1988) also touched upon the burden of expensive drug regimes on the poor and the "working poor." For this reason, the Inquiry commissioned a research study to determine the current status of access to prescription drugs by Ontarians. In his report entitled "An examination of access to prescription drugs in Ontario and an evaluation of selected cost-sharing policies," Prof. Hurley reinforced the problems of financial access that were brought forward to SARC and the Inquiry. A number of options which would ensure accessibility to required medication and maintain the viability of the drug program in Ontario were provided by Prof. Hurley. (See volume II)

Information about the role of the Ontario Ministry of Community and Social Services was provided in that body's submission to the Inquiry.[33] There are two social assistance programs operating in Ontario: general welfare assistance (GWA) and family benefits assistance (FBA). GWA provides immediate financial assistance for temporary hardship due to illness, unemployment or some other misfortune. This program is delivered by municipalities and Indian bands and funding is the joint responsibility of the federal, provincial and municipal governments. FBA is a provincial program covering the elderly, the disabled, blind, permanently unemployable and sole support parents.

In addition to providing drug benefit cards to eligible GWA and FBA recipients, the two special programs directed specifically toward prescription drug costs that were mentioned earlier continue to exist. Although these two programs are directed toward GWA and FBA recipients who are already eligible to receive prescribed drugs free of charge, they also provide assistance for products not covered in the formulary. Assistance is also provided to the "working poor" and recipients of other government social assistance programs who may not be eligible for the ODB program (e.g. those under 65 years of age receiving CPP benefits). Benefits offered by the special assistance program are shared equally between the province and the municipal governments, while the supplementary aid program requires the municipal government to contribute 20 per cent of the cost.

3.4 Other Provincial Prescription Drug Plans

Each of Canada's 10 provinces and two territories have publicly-funded programs. Although the primary goal of each program is similar—viz. to ensure that there are no financial barriers which may limit access to necessary medication—the approach to achieving this goal is quite different in each jurisdiction. What follows is a brief comparison of the salient features of the drug benefit programs in Canada. For a detailed report and analysis refer to Prof. J. Hurley's report, in volume II.

32 Briefs from: Angela Ombricolo (13-3500), Cystic Fibrosis Foundation (15-3300), Mary Cascagnette (19-3500), Dr. G.K. Martin (20-3700), Helen Jutzi (22-3500), Cystic Fibrosis Foundation, Cornwall chapter (23-3300), Ontario Nurses Association (35-3100), Rho Pi Phi International (44-3200), East End Health Centre (45-3700), Income Maintenance for the Handicapped Coord. Group (46-3300), Ontario Coalition for Senior Citizen's Organizations (76-3100), Ernie Epp (99-3400), Helen Gormley (105-3500), College of Nurses of Ontario (107-3700), OMA (115-3100), Kiwanas Club of Ottawa (116-3100), Advocacy Resource Centre for the Handicapped (130-3300), PUSH Ontario (131-3300), Manitoulin-Sudbury DHC (134-3400), Dennis McLay (136-3500), Cystic Fibrosis Foundation, Thunder Bay chapter (139-3300), Brian and Marie McGuire (151-3500), A. Thompson-Guppy (152-3500), Kidney Foundation of Canada (153-3300), City of Toronto, Department of Public Health (166-3100), Metro Toronto Epilepsy Association (169-3100).

33 Brief #109-3400, November 1988.

3.4.1 Eligibility

Four provinces (British Columbia, Alberta, Saskatchewan and Manitoba) have universal programs that essentially allow eligibility to all residents. The Newfoundland and Labrador program allows access to only seniors and social assistance recipients. The remaining provinces and territories (Ontario, New Brusnwick, Nova Scotia, P.E.I., Quebec, Yukon and Northwest Territories) are targeted to benefit seniors, social assistance recipients and at least one other group.

3.4.2 Beneficiary Cost-sharing

While a number of provinces do not require financial participation by the recipient, there are provinces which have introduced different forms of beneficiary cost-sharing commonly referred to as "co-payments" (Alberta, B.C., Manitoba, N.B., P.E.I. and Saskatchewan.) The co-payment mechanisms can involve some combination of deductibles, a coinsurance rate, a per-prescription charge, or a cap on expenditures. Only Ontario, Nova Scotia, the Northwest Territories and the Yukon require no cost-sharing.

3.4.3 Benefits

The range of benefits is another factor which distinguishes each provincial program. Eligible benefits are defined by a formulary listing or a schedule in Ontario, Newfoundland, Saskatchewan, Quebec and the Northwest Territories. The remaining provinces/territories (Manitoba, the Yukon, B.C., Alberta, New Brunswick, Nova Scotia and P.E.I) do not have formularies or schedules. Therefore, eligible benefits are all drugs for which a prescription is required by law.

3.4.4 Product Selection

This is another feature of provincial drug programs. Only two provinces, Saskatchewan and Newfoundland, currently legislate mandatory product selection. In these two provinces, a pharmacist is required to dispense the lowest-priced interchangeable drug listed in the formulary or schedule unless the physician marks "no-substitution" on the prescription. A permissive type of product selection is practiced in Ontario, Alberta, B.C., New Brunswick, Nova Scotia, Quebec and Manitoba. Permissive implies that the pharmacist is allowed, but not required, to dispense a lower-cost interchangeable.

3.4.5 Administration

There are also administrative differences in determining drug cost and other components such as dispensing fees and dispensing limits. Ontario is the only province which defines drug cost as the best available price (BAP) plus a mark-up. The manufacturer's suggested price, or simply the price listed in the formulary, is the most common definition of drug cost. Actual acquisition cost (AAC) is the third method for defining drug cost and is defined as the net cost to the pharmacy after discounts, rebates, etc. have been applied. Currently, B.C., Nova Scotia, Manitoba and P.E.I use this definition.

Table 3.3 provides a summary of the eligible groups, the type of "co-payment" arrangement and the dispensing/professional fee for the provinces and teritories.

3.4.6 Current and Future Trends

Over the last few years, several of the provinces have commissioned studies to examine their health care programs and expenditures.[34] A common feature of these reports has been the concern over rising drug benefit expenditures. Within this context, recommendations regarding the drug benefit component have been made in each report. While the recommendations address changes or modifications to specific features of each province's program, the underlying objective is to emphasize improved quality of care. Cost containment is regarded as a secondary outcome.

Over the years, each province has introduced different mechanisms to assist it in controlling the expenditures of the drug benefit component of health care programming. The various commissions, studies and reports are expected to have an influence on current and future health care delivery and ultimately on the funding of prescription drugs. Therefore, even as this report is being written, changes may be taking place in other provinces. A brief description of a few provincial programs concludes this section.

3.4.6.1 Nova Scotia: *The Report of the Nova Scotia Royal Commission on Health Care: Towards a New Strategy* states that the cost to run the Pharmacare program has been increasing 18 to 20 per cent annually over the last 10 years. When it was first initiated in 1975, the total cost of the program that year was approximately $7 million. In 1989-90, the cost has risen to $76 million. Roughly 15 per cent of Nova Scotia's residents (seniors and those on social assistance) are covered by Pharmacare.

Until the release of the Royal Commission's report, Nova Scotia had established limited cost control measures for the Pharmacare program. An incentive payment of $0.50 is added to the dispensing fee for each prescription that is product selected. However, one important difference between this program and the Ontario Drug Benefit program is that there is no protection from product selection liability.

3.4.6.2 New Brunswick: New Brunswick has two programs which provide government assistance for prescription drugs: the Health Services Pharmaceutical program and the Prescription Drug program. The former was established in 1971 and includes benefits to recipients of social assistance and their dependents, recipients of child welfare and some mental health patients. The latter program, established four years later, provides benefits to a wider range of individuals.

In 1988, the government of New Brunswick established a commission to look into the province's health care system and to seek recommendations that could lead the system to "function in the most efficient and cost effective manner."[35] The report notes that expenditures under the Prescription Drug program have increased at an average annual rate of 11.4 per cent for the period from 1984-85 to 1988-89. The annual rate of increase for the Health Services program is greater, at 15.4 per cent annually, over the same period. New Brunswick's two programs represent about 16.6 per cent of the total provincial population and, as in Ontario, the two programs represent 5 per cent of total provincial health care expenditures.

In May of 1988, New Brunswick introduced changes to its program. The two important changes were: seniors not receiving financial assistance became responsible for paying the full cost of the drug dispensing fees; and the dispensing fee ceiling was raised from $45 to $120 for seniors receiving social assistance.

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[34] *The Nova Scotia Royal Commission on Health Care*, Nova Scotia Government, Halifax, N.S., December, 1989; *Report of the Commission on Selected Health Care Programs*, New Brunswick Government, Fredericton, N.B., July, 1989; *Report of the Study into the Growth in Use of Health Services*, Saskatchewan Health, Regina, Saskatchewan, January, 1989.

[35] Report of the Commission on Selected Health Care Programs, New Brunswick, July 1989, p.1.

Table 3.3

Condensed Summary of Provincial and Territorial Drug Reimbursement Programs

Province/ Territory	Program Category	Beneficiary Copayment	Basic Professional Fee Dispensing Fee	Expiry Date
Alberta	65+	20% of Rx	$6.30	30/06/89
	Miscellaneous	20% of Rx + balance of premium		
	Social Assistance	None		
British Columbia	65+	75% of fee up to $125 max.	$5.94	(Average fee for Feb./89)
	Long-term care	None		
	Social Assistance	None		
	Universal(< 65)	$325/family + 20%($2000. max)		
Manitoba	65+	$88.50/family + 20% thereafter	$6.50	31/03/90
	Long-term care	None		
	Social Assistance	None		
	Universal(<65)	$156.15/family + 20% thereafter		
New Brunswick	65+ & home care	$6.34/Rx (GIS: $120 max.)	1. $6.30	1. 30/06/89
	Disease related	None	2. $6.45	2. 30/06/90
	Long term care	None		
	Miscellaneous	"Special" cases: same as for 65+ Extra-mural hospital: none		
	Social Assistance	Ranges from none to $2/Rx		
Newfoundland	65+ (with GIS)	Dispensing fee	65+: $6.40	65+: Average for Mar.89
	Social Assistance	None	SA: $5.90	SA: 31/03/89
North West Territories	60+	None	$7.85	30/06/89
	Disease related	None		
	Social assistance	None		
Nova Scotia	65+	None	$7.53	30/06/89
	Disease related	None		
	Social assistance	None		
Ontario	65+	None	$6.22	30/11/89
	Home care	None		
	Long-term care	None		
	Social assistance	None		
Prince Edward Island	65+	Fee=1st $4 of ingredient cost	65+: $6.35	65+: 31/12/89
	Disease related	None	Insulin: 25% markup	
	Social assistance	None	SA: $6.60 (no fee at gov't dispensary)	SA: 31/10/89
Quebec	65+	None	$4.70 (1st 20,000 Rx)	31/05/89
	Social assistance	None	$4.05 thereafter)	
Saskatchewan	65+	$75/family + 20% thereafter	1. $6.00	1. 30/09/89
		$50/single senior + 20%	2. $6.25	2. 30/09/90
	Disease related	None. Diabetic supplies: nominal charge	3. $6.50	3. 30/09/91
	Long-term care	Palliative care: none		
		Nursing homes: Maximum of $3.95/Rx		
	Miscellaneous	"Unique circumstances": 20% of Rx		
		Provincial wards and inmates: none		
	Social assistance	Ranges from none to $2/Rx maximum		
	Universal (<65)	$125/family + 20% thereafter		
Yukon Territory	65+	None	$7.50	30/04/89
	Disease related	None		

GIS = guarantee income supplement
Rx = prescription
SA = social assistance
Source: Bureau of Pharmaceutical Surveillance, Health Protection Branch, Health and Welfare Canada, May, 1989

3.4.6.3 British Columbia: In British Columbia, the total cost of the Pharmacare program has increased 40 per cent over the two years 1985 to 1987. As a result, the government made two significant changes to the program. First, the drug cost was determined by the actual acquisition cost (AAC) and second, seniors were required to pay a 75 per cent co-payment on dispensing fees. One major criticism of the second change to the program is that while many health care organizations are advocating the use of one pharmacy, the co-payment on dispensing fees actually encourages "shopping around" for lower dispensing fees, thereby lowering the cash outlay by the senior.

3.4.6.4 Saskatchewan: In 1989, a report entitled *A Study into the Growth in Use of Health Services* was published. The study reports that expenditures per person for drug material costs went from $15.72 in 1977-78 to $58.69 in 1985-86. This reflects an increase of 273.3 per cent or an annual increase of 17.9 per cent. Surprisingly, the study reveals that while price increases represented 29.6 per cent of overall increases, the increased volume per person represented 43.4 per cent. Of the 43.4 per cent, only 3.3 per cent was attributed to an ageing population.

Saskatchewan, as Alberta, initiated a triplicate prescription program in August 1988. The program is run by the College of Physicians, the College of Dental Surgeons of Saskatchewan and the Saskatchewan Pharmaceutical Association. More recently, however, the health ministry introduced a deductible and Saskatchewan is the first province to introduce a "smart card." This is a card which utilizes a magnetic strip to facilitate collection of data for a potential drug utilization review, to verify eligibility, assist in billing and claims payment and to allow pharmacists access to a more comprehensive patient data base.

Appendix 3.1

Federal and Provincial Initiatives in the Prescription Drug Marketplace

Federal	Year	Provincial
PMPRB Price Guidelines (Implemented)	1989	ODB-Special Authorizations discontinued
PMPRB Price Guidelines (Published)	1988	MOH extends eligibility for cystic fibrosis and thalassemia patients
Bill C-22	1987	Lowy Inquiry
	1986	Ontario Drug Benefit Act/Prescription Drug Cost Regulation Act (Bills 54/55)
Eastman Commission (Inquiry into the Pharmaceutical Industry)	1984	Gordon Commission (Pricing of Multiple-Source Drug Products in Ontario
	1978	Bailey Committee (Report of the ODB Formulary Pricing Committee)
	1977	CDI/Drug Benefit Formulary combined
	1975	Extension of ODB to *all* senior citizens in Ontario
	1974	Ontario Drug Benefit Program (ODB) established
	1972	Amendments to Pharmacy Act (product selection/removal of liability)
Drug Quality and Assurance Program (QUAD)	1971	Porter Committee (Review on Prescription Product Substitution)
Task Force Report on the Cost of Health Services in Canada	1970	First Comparative Drug Index (CDI)
Bill C-102, Amendments to Patent Act	1969	
Canada Health Act	1968	Introduction of PARCOST and formation of DQTC
Royal Commission on Health Services (Hall Report)	1964	
	1962	Special Assistance/Supplementary Aid (General Welfare Act)
	1960	Select Committee of the Legislature: Examination into the cost of drugs in Ontario
	1959	Ontario enters into agreement with federal government re: hospital insurance program
Hospital Ins. & Diagnostic Services Act	1957	

Chapter IV
The Formulary and the DQTC

This chapter contains a discussion of, and recommendations relating to, the Ontario Drug Benefit formulary, the Drug Quality and Therapeutics Committee, special authorizations and generic drug product substitution.

4.1 Drug Quality & Therapeutics Committee (DQTC)

Both the Ontario Drug Benefit (ODB) formulary and the Drug Quality and Therapeutics Committee (DQTC) form an integral part of the ODB plan's evolution.

As indicated in greater detail in section 3.1, the late 1950s and early 1960s were marked by a growing interest in reimbursement plans for prescription drugs, largely because of the significant cost of pharmacotherapy.

One of the programs which was established both to improve the quality and reduce the cost of reimbursement, was the Prescription Drugs at Reasonable Cost (PARCOST) program, which was preceded by the establishment of the DQTC. At its inception, the initial DQTC, comprising seven members, was given the mandate to ensure that reliable drugs of quality were available to hospitals and the public.

The committee appears to have received its mandate as a result of concern about the uncertain quality of new drugs at a time when the pharmaceutical industry was burgeoning with new manufacturers and a proliferation of new products, some of which were being marketed in competition with existing products. Some of this uncertainty arose from reported failures in treatment using new generic products. The mandate of the committee was 1) to establish an official list of medications considered to be of satisfactory quality; 2) to selectively add medications to the official list which, in its opinion, were associated with long term and expensive therapy or which were of particular therapeutic value, and 3) to perform other functions needed to carry out its objectives. Throughout the period from 1968 to the present, the DQTC has been the catalyst in the continuing publication of biannual formularies, providing the expertise for the review of products to be included.

4.1.1 Ontario Drug Benefit Formulary (ODBF)

The ODB plan, though complex, contains two fundamental components: the beneficiaries and the benefits. Since the Inquiry's views and recommendations regarding beneficiaries and access to prescription drugs are described elsewhere in this report, (see section 9.1) this section will focus on the benefits. In essence, these are announced through the Ontario Drug Benefit formulary (ODBF).

The formulary is significant both for the Ministry of Health (MOH) and, indirectly, ODB program beneficiaries, for it defines the drug

products, the cost of which the Ministry will reimburse. Various reports, briefs and comments have been directed to the Inquiry regarding the ODBF. While some of these have concerned only the biannual formulary publication itself, others have embraced the entire system encompassing drug product submissions by manufacturers, the review process for the purpose of selecting products for inclusion, and the way the ODBF is communicated to professionals.

A formulary—a compilation of available drug products—is not unique to the ODB program, but forms a part of most drug reimbursement plans throughout the world. In this province, the Ontario Hospital Association (OHA) promotes the establishment in each hospital of a pharmacy and therapeutics committee which develops and maintains a "formulary system." This system is intended to encourage rational pharmacotherapy, discourage the use of less-than-optimal drug therapy, provide for generic selection and competitive bidding, and reduce inventories. The hospital formulary, the cornerstone of the system, is a continually revised compilation of drug products that reflects the best current clinical judgement of the medical and pharmacy staff. To be effective, the system must 1) have the approval of the organized professional staff; 2) establish broad policies relating to drug use in the institution, including the evaluation or appraisal of alternate drug entities, and the selection, procurement, storage, distribution, and safe use of drugs; and 3) provide both structure and flexibility so that comprehensive drug-use reviews and educational programs can become the norm. The MOH, with its ODBF and DQTC, operates a large-scale version of the formulary system found in most Ontario hospitals on a province-wide basis.

4.1.2 The Formulary

Although the ODBF is euphemistically named the 'formulary', it is not a formulary in the usual sense of the word, but simply a list of drug product benefits. It encompasses those generic or nonproprietary names of drugs eligible for reimbursement, available strengths and dosage forms, and the drug identification numbers (DINs) which provide a code for specific manufacturers' products, and an indication of cost for each product. Where more than one manufacturer produces a particular drug in a specified strength and dosage form, the formulary indicates which products are interchangeable. The legislation which mandates the MOH selective listing of products in the formulary, along with manufacturers' and health professionals' obligations, is the Ontario Drug Benefit Act (1986) and the Prescription Drug Cost Regulation Act (1986).

The current biannual ODBF publication is considered inadequate by many whose criticisms can be divided into two broad areas:

- the publication and its contents, and
- its role in drug utilization control.

There is every indication that, at present, the publication is only used in a very limited way by most prescribers. Although it informs the prescriber whether a particular product is a benefit, many physicians continue to be uninterested in or unaware of the cost of drug treatments. That the formulary is not more used by prescribers could reflect their lack of concern about cost issues, but it may also indicate that they do not find relevant and readily accessible information in the publication. In contrast to some formularies in other countries, it does not serve as a guide to the prescriber regarding common doses—particularly in the elderly—nor does it advise treatment strategies. Many professionals who use the present formulary complain that the publication is 'unfriendly', perhaps in part because of its style.

Nevertheless, the formulary appears to be of value to pharmacists by defining products for which reimbursement is offered and the amount of that reimbursement, and for determining the products that are interchangeable for the selection of inventory.

4.1.3 Continuation of the Formulary

Although the formulary has played a fundamental role in the ODB plan, this Inquiry has seriously examined whether it is necessary for it to be continued. The question needs to be addressed from the different perspectives of the MOH, the pharmaceutical industry, the prescribers, the pharmacists and the beneficiaries.

For the MOH, the formulary is an inventory of quality products made available to the beneficiaries of the ODB. It contains a selection from the more than 5,000 products approved for sale in Canada by the federal Health Protection Branch (HPB), which has deemed them safe and effective; however, there is no consideration of relative merit in HPB approval, as there is in the Ontario formulary. The formulary is also a vehicle to control costs. Although an organizational structure that includes MOH employees and the DQTC is needed to maintain it, this cost—approximately 1 per cent of the overall cost of the program—is relatively small.

It is difficult to gauge whether the formulary, with its negotiated prices, has actually saved money with respect to the single-source products, for which there is no competitive alternative, listed as benefits. Perhaps some savings have been realized by excluding some new single-source products, or at least delaying their entry into the formulary if they are overly costly, have only marginal benefits and present a high use potential. However, the net financial impact of the exclusion of these products is not clear in terms of the cost of the use of alternate products in the short term, or in terms of overall long-term health costs. With respect to multiple-source products, the designation of products as interchangeable has undoubtedly yielded substantial savings through competitive pricing.

Regardless, as described in section 3.2, the overall cost of the ODB plan has risen dramatically. In analyzing this rise, the Inquiry concludes that it is primarily attributable to increases in the number of claimants, the average number of claims per claimant, and the average cost of drugs per claim. That the third factor in itself accounts for nearly 50 per cent of the increase over the past decade suggests that the establishment of the formulary can only have been partially successful in containing costs.

There is no doubt that the formulary has had both positive and negative effects on the drug industry. Although it is the federal HPB that approves products for sale in our country, the listing of a given product in the Ontario formulary represents a 'good housekeeping seal of approval'. Other Canadian jurisdictions, and many Ontario institutions, such as hospitals, appear often to make local formulary decisions based upon whether a product is listed in the ODBF. Drug product advertisements in journals also frequently alert readers to its inclusion. To be listed, therefore, is an endorsement of the product and a form of promotion.

On the negative side, to be considered for approval by the MOH requires a new submission by the manufacturer, who has already gone through the steps needed for HPB approval, and another evaluation of the information, followed by the possibility of rejection. In addition, a formulary listing requires the price to be negotiated with the Ministry. Nevertheless, since listing in the ODBF means sizeable potential economic benefits, not to be listed can present a financial penalty and it is self-evident that manufacturers want their HPB-approved

products to be available for reimbursement in Ontario.

The ODBF has sometimes been viewed optimistically as a device to promote quality prescribing. Unfortunately, this alleged benefit appears to have been minimal because the mere listing of products does not necessarily lead to good prescribing. (Of course, the prescriber is affected by the formulary when the list of available benefits does not include products that are the prescriber's first choice. If the excluded products are, in fact, of questionable value in comparison to those available as benefits, it could be argued that the formulary does have a beneficial effect on prescribing.)

Prescribing a product which is not a benefit is possible, but the patient may be forced to pay for the medication out of pocket. Some physicians and dentists have regarded the formulary as an intrusion on their freedom to practice when all products approved by HPB are not considered as ODB benefits. Any form of additional prescribing control, such as the now defunct special authorization program, was seen as a further intrusion. Clearly, the elimination of the current formulary would permit all physicians and dentists to enjoy unbridled prescribing options for ODB beneficiaries.

As to pharmacists, the selective formulary presents certain advantages; for example, it reduces the range of inventory that must be stocked.

The beneficiary is only influenced by the formulary when his or her doctor or dentist wishes to use a product which is not a benefit, and this has already been considered above.

Therefore, although the present ODBF is only a minor factor in influencing prescribing, it does exert considerable control over costs, most notably through the listing of interchangeable products. There are deficiencies in the present formulary, as cited in part above, which would point to the need for change. Two clear choices emerge: to eliminate the formulary or to alter it.

4.1.4 Option 1-Elimination of the Formulary

Since this Inquiry is recommending that a co-payment system be introduced for beneficiaries who can afford this (see section 9.1.6), there may be little need to preserve the formulary as another cost-controlling device. If it were eliminated, the marketplace could be expected to exert some control over the overall cost of drugs to the government. If the cost of the ODB plan increases beyond established limits, the government could counteract the effect by raising the co-payment fee and/or payment limit, in order to cap the overall cost of the plan. Any significant increases in either or both co-payment features would probably create pressure on prescribers and patients to reduce prescription drug use, with potentially dangerous consequences for those in need of drugs that become less available to them.

If the formulary were eliminated, all products authorized for sale in Canada by the HPB could be benefits, including products which at present have been excluded because they were considered unacceptable in terms of quality and/or cost. (Of course, increased use of these products would be seen by many as an undesirable outcome.) Disposing of the formulary would also have the benefit of eliminating the cost of the review process currently required for formulary inclusion.

If the formulary were discontinued, the MOH could still retain a powerful influence over drug use and costs. First, it could promote the use of interchangeable generic products, which clearly reduces the cost of drugs. The work of defining the interchangeable list could continue until such time as the HPB

assumes, for all of Canada, the role of officially assigning a bioequivalence rating to products given a notice of compliance. Second, new, unique and/or particularly costly products could be given special consideration and possibly restricted to controlled use in selected institutions. Third, the Ministry could still constrain the reimbursement cost of a drug product by requiring manufacturers to negotiate the provincial price. Fourth, the Ministry could establish a drug use review committee which would monitor prescribing patterns and, in a collaborative and collegial manner, work with the appropriate organizations to modify improper prescribing.

4.1.5 Option 2 - Modifying the Formulary

It appears that some drug prescribing is inappropriate at present. The elimination of the special authorization program, on our recommendation, which pared about 1,400 products from the unofficial list of benefits, was met with no great outcry. This suggests either that acceptable alternatives were found or that many of these prescriptions were unnecessary. The formulary still contains some products which, if reviewed again, would no longer be included. Generally, a product, once listed, has been retained, creating almost a "right" that manufacturers have come to expect. It is also clear that the present formulary makes no distinction among products within a therapeutic class, perhaps implying that they are all equally acceptable. Optimal pharmacotherapy, however, implies that the proper treatment strategy ordinarily begins with the use of cost effective first-line products, followed by more costly alternatives only when they are specifically required for a patient's special needs. Some products, both because of their potential toxicity and/or low cost effectiveness, should legitimately be considered only after certain conditions become clearly evident in a given patient.

It appears logical then that for better treatment of ODB beneficiaries, the formulary, if retained, should be modified so that it becomes more dynamic. That is, at any point in time it should contain only those products which are still 'state of the art' as therapeutic entities. It should also encourage prescribers to select the optimal product from the list of available alternatives. This could be accomplished, in part, by designating some drug products for general use and others for 'limited use' based on specific risk/benefit/cost considerations. In order to put teeth into this two-tiered categorization, prescribers would need to be held accountable, particularly for their selection of limited-use products.

This option would mean that products would be scrutinized more closely and more regularly, and fewer would be retained in the formulary. This option, if adopted, would result in more adversarial confrontations between the Ministry and the pharmaceutical manufacturers and the DQTC would have to accept a much greater workload to cope with its product review activities. It would mean also that Ontario prescribers would have to adapt to more external intrusion into their respective practices. Many professionals can be expected to resent this, even though the quality of care is likely to be improved in the long run.

4.1.6 Recommendations with Respect to the Formulary

Of the two options presented, discontinuing the Formulary would undoubtedly receive the enthusiastic support of the manufacturers and most prescribers. Yet it would likely result in higher costs to the taxpayer, and would carry the potential for more inappropriate pharmacotherapy. The experience in hospitals is that the adoption of a local formulary discourages the use of less-than-optimal drug products.

Although eliminating the formulary does not preclude other ways of promoting rational prescribing—for example, through drug use review and professional education—it would take some considerable time and effort to make these as effective.

After considering all relevant factors, and giving particular weight to the need to encourage high quality pharmacotherapy, we have concluded that the public interest is best served by retaining, but modifying, the formulary.

4.1 The Committee therefore recommends that an Ontario Drug Benefit formulary be retained but with significant changes.

It is important that a new formulary be created from a zero base, without the expectation that any particular drug product now listed will necessarily be retained. That is, only those products with favourable benefit to harm and benefit to cost ratios would be listed.

4.2 The Committee therefore recommends that after publishing the January, 1991 edition, the formulary be frozen in order to permit a new unencumbered formulary to be created. The benefits listed in the January, 1991 edition would therefore only continue until the publication of the unencumbered formulary, at which time all existing benefits would be terminated in favour of the new formulary benefits.

During the interval between the discontinuation of the present formulary and the development of the new formulary, the MOH will need to make provisions so that any significant new therapeutic advances can be provided as benefits to ODB beneficiaries.

It is also recognized that a provincial formulary cannot contain all relevant drug and prescribing information. It has been recommended elsewhere that a new publication 'Medications of Choice' be made available to guide prescribers in the rational selection of drugs (see section 7.2). Nevertheless, the new formulary should be user-friendly, particularly to prescribers.

4.3 The Committee therefore recommends that, beginning immediately, a review with respect to efficacy, safety, equivalence and cost of all products now listed in the formulary be initiated by the Drug Quality and Therapeutics Committee.

At present the onus for launching the review process that leads to a product being listed in the formulary rests with the manufacturers: without a manufacturer's submission, the product can not gain entry to the formulary. This is undesirable, for it means the DQTC cannot recommend that a drug be listed, even though it is considered to be an important therapeutic product.

4.4 The Committee therefore recommends that mechanisms be developed to permit a drug product to be listed at the recommendation of the DQTC, even when no submission was initially made by a manufacturer.

4.5 The Committee also recommends that provisions be made to allow the formulary to take on a dynamic character; single and multiple source products should be regularly re-evaluated and then be retained, deleted or redefined by category.

In view of the desirability of promoting optimal pharmacotherapy (see section 7.1), it is clear that prescribers should be held accountable for their selection of drug products. However, they must be permitted appropriate latitude in prescribing products not found in the new formulary for their ODB beneficiary patients when this is clearly in the patients' interest.

4.6 The Committee therefore recommends that the Ministry of Health, in cooperation with the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons, the Ontario Medical Association, the Ontario College of Pharmacists, and the Ontario Pharmacists' Association launch a program by January 1, 1992, that will monitor drug use and increase prescribers' accountability for their pharmacotherapy.

Although the co-payment recommendation (section 9.1.6) allows the government to exercise some cost control over the ODB plan, the formulary can also exert an effect beneficial to the taxpayer, particularly through the listing of interchangeable products. Currently, although the federal government uses bioavailability data in granting the notice of compliance that permits a new drug product to be marketed in Canada, it does not make a statement about its interchangeability with other products. It would appear advisable that there be one national equivalence standard, rather than having various provincial or even regional jurisdictions duplicating efforts in this regard. However, until federal-provincial and inter-provincial agreement can be reached on a single national standard, the Ontario government will need to continue to identify interchangeable products (see also section 4.4.1). It is important to ensure that all products listed as interchangeable be of such quality that patients' therapy will not be compromised in any way when a new product selection is made by the pharmacist as a result of changes in the best available price (BAP) (see recommendation in chapter 3).

At present, some categories of products, notably the modified release dosage forms, do not offer competitive alternatives.

4.7 The Committee therefore recommends that the development and use of multi-source products in non-conventional dosage forms be promoted where possible by assembling and promulgating criteria which permit interchangeable products of non-conventional dosage or administration forms to be identified and listed.

It is true that many prescribers specify 'no substitution' on their prescriptions because, as a result of personal preference or the promotional influence of the manufacturers, they believe the prescribed drug is superior. However, there is no substantiated evidence at present that patient treatment is compromised when other interchangeable products are used. Generic products are usually as effective and less costly than the brand name products with which they are interchangeable. In fact, when patients are hospitalized in Ontario it is likely they will be stabilized on a generic product if one is available. Efforts should be made to allay prescriber concerns about generic substitution while recognizing that in rare instances substitution is not indicated.

4.8 The Committee therefore recommends that the Ministry of Health, the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons, the Ontario Medical Association and the Council of Faculties of Medicine work together to develop mechanisms to promote generic prescribing when this is appropriate.

4.1.7 The Process

Through the Ontario Drug Benefit Act (1986), the Prescription Drug Cost Regulation Act (1986) and the attending regulations and guidelines, the Ontario government has set out the procedures and conditions for manufacturers to make submissions for formulary inclusion. It is important that manufacturers be clearly apprised of the criteria for the acceptance of products. Since we believe the recommended formulary should permit the

listing of desirable products, even when there is no submission by a manufacturer, it is important that manufacturers cooperate with the Ministry in furnishing information about products.

A new formulary is published every six months—July and January—and these deadlines have created a climate in which unnecessary tensions exist. Frequently there is a flurry of activity as manufacturers rush to submit the product dossier by the deadline date, and the Ministry and DQTC are pressured to meet time limits for the review process. With a deluge of submissions, the ability of the DQTC to make critical decisions about the relative merit of specific products is taxed. If the DQTC is not only to consider products for listing but also to recommend prescribing criteria for those products assigned to limited use status, a better system needs to be developed.

Manufacturers who fail to furnish key information by a deadline date are denied further consideration until the next formulary cycle. Because of time limits, they are sometimes also prevented from meeting with the Ministry or the DQTC to discuss important issues related to the product. This entire process is fraught with inadequacies and is in need of change. Time must be permitted for the review process and equitable opportunity must be given for fair consideration of manufacturers' concerns.

4.9 The Committee therefore recommends that, after the January, 1991 edition, the Ministry discontinue the present system of formulary publication wherein bi-annual deadlines are specified and devise, in its place, a continuous system of product review.

If this recommendation is adopted, the Ministry will need to determine a logical date for the publication of a formulary. Since the publication is not only associated with the announcement of the benefits but also with the prices for product reimbursement, the Ministry will need to devise a new method of regularly announcing changes in both the benefits and prices.

The price of a drug product, particularly relative to other dosage forms or products in its therapeutic category, is an issue considered in the review process. It is worthy of note that a recent case involving a product submission extended beyond the MOH into the domain of the Ministry of Industry, Trade and Technology. It was argued that the true cost to government of a product should not be judged only by examining the best available price to the ODB plan, because factors such as taxes paid by the manufacturer, the number of Ontario employees, and investment in the province should legitimately enter the overall formula. It has been argued that this larger issue of overall benefit to the province should be examined closely so that all pharmacoeconomic factors are considered during the review of a drug product. Neither the Inquiry nor the DQTC have had the resources or the time to consider the interplay of broad economic benefits to Ontario with respect to specific drug prices. This general issue is considered further in chapter 5.

When a manufacturer receives word from the Ministry on the status of a particular product, opportunity is given for a reply and reconsideration if the product has been rejected. If the Inquiry's recommendations relative to a new formulary are adopted, manufacturers will potentially receive two notifications to which they may wish to respond: 1) a total rejection of a product for listing or 2) the relegation of a product to the limited use category. The new formulary, which can be expected to reduce the number of eligible products and assign others to limited use status, has the potential for increasing the adversarial relationship between manufacturers and the Ministry. Clear and fair guidelines will need to be established so that all parties understand the

negotiating process and know the boundaries and criteria for re-evaluation. Since the DQTC is assembled as an arms length expert committee to review drug products, it would appear unnecessary to create yet another panel of experts to serve as an appeal committee in order to rule on the expert advice of the DQTC.

4.2 DQTC

The DQTC plays a pivotal role in the review process which ultimately leads to the benefits announced in the formulary. As stated earlier, the first committee in 1968 was composed of seven members; currently it comprises 19 members appointed by Order-in-Council.

The Inquiry has received various comments regarding the DQTC. Not surprisingly, some claim the DQTC is redundant and the product review process is unnecessary because, in their view, this function is adequately fulfilled by the HPB, the federal regulatory body. Understandably, this opinion coincides with the view that the formulary is not needed. We have received no indication that the DQTC is considered to be unskilled in its product evaluation role. There is general support for the committee and, if anything, it has been recommended to us that the DQTC may be further strengthened by enhancing the perspective of the general practitioner in its complement of expertise.

4.2.1 Composition and Mandate

The committee is funded by, and is advisory to, the Minister of Health but operates at arms length. The Minister is free to accept or reject the advice received. Some view this veto power by the government to be unacceptable. However, by creating a committee that is purely advisory, the government assumes full responsibility for its decisions, which gives the DQTC a measure of security. It seems unlikely that the committee would want to change this status and assume full responsibility and the risk of litigation.

The DQTC is composed of physicians, pharmacists and scientists, drawn from various parts of the province, who have the recognized expertise needed to review drug product submissions and advise the Minister. The terms of reference (1987) of the committee are wide-ranging and include:

- To advise the Minister on the operation of a program to assist the people of Ontario to obtain prescribed pharmaceutical products of quality at reasonable cost.
- To establish criteria to evaluate the quality and therapeutic value of drug products.
- To recommend to the Minister which drug products have met the prescribed conditions to be eligible to be designated as interchangeable products or to be listed in accordance with the Ontario Drug Benefit Act, 1986 and the Prescription Drug Cost Regulation Act, 1986.
- To evaluate pharmaceutical manufacturers and pharmaceutical products.
- To provide advice on relevant drug, pharmaceutical and therapeutic questions solicited or requested by the MOH from time to time.
- To review and assess information related to drug and pharmaceutical products prepared for the committee and for the Minister by selected consultants.
- To recommend, for distribution to the public and the health professions, information relating to pharmaceutical products and therapeutic topics.
- At the Minister's request, to act as liaison between the Ministry and professional, educational and other groups.

The committee extends its breadth and depth of expertise through a cadre of external consultants who are asked to furnish reviews and advice from time to time. It is also supported by technical and administrative personnel from the drug programs branch of the Ministry of Health.

4.2.2 Recommendations with Respect to the DQTC

Earlier in this section the need for a formulary was considered and we concluded, and recommended, that it be retained. It follows that the Ministry must obtain expert advice to decide which drugs should be contained in the formulary and in what categories, and which products are interchangeable. Alternatives to the DQTC can be envisioned but there are no compelling reasons which would dictate a change.

The concept of an advisory body of experts whose full-time employment is outside the government's bureaucracy has its benefits. The experts, some of whom prescribe the formulary benefits to beneficiaries of the ODB plan, bring along an external critique of the ODB plan and the drug programs branch, and carry back to their spheres of influence a more informed view on various facets of the program. In a limited way, this fulfills part of the hospital 'formulary system' described earlier, in which support for the formulary is mobilized among users.

4.10 The Committee therefore recommends that an expert drug advisory committee, as represented by the present DQTC, be retained, with terms of reference similar to those already established, but modified as proposed in recommendation 4.11.

It is essential that the DQTC and the Ministry work together closely and every effort must be made to safeguard a relationship of trust. For example, when the MOH fails to follow the advice of its committee, reasons for the decision should be provided.

In view of our recommendations surrounding the new formulary, it will be important to retain the needed expertise to review all products in the present formulary. Since this would be a major new responsibility added to the normal review of product submissions, it may be necessary to seek further outside assistance, both from individual experts and from professional associations. This will enable the task to be completed in a reasonable time and will enhance support for the Ministry's final decisions about the listing of general and limited use products. Mechanisms for such additional outside assistance should be explored. The review process will also place greater demands on the drug programs branch staff, and the MOH must ensure that adequate technical and administrative support personnel are available.

The 1987 terms of reference enable the DQTC to respond to most of the responsibilities identified in our recommendations about the formulary. However, there are two issues that would suggest the need for a review of these terms. First, the comparative cost evaluation of products requires a more specific mandate concerning pharmaco-economic evaluation, particularly in the area of cost-effectiveness or cost-benefit analysis. At present the committee has neither the mandate nor the expertise for such evaluation. Second, in that we are recommending that the formulary be a dynamic publication, it will be necessary to monitor and evaluate the list of products in the light of drug use patterns, experience and scientific knowledge. It will also be important to evaluate the changes brought about by the new formulary. This supports the need for participation in drug use review (see section 9.2). However, it also suggests the need for specific research on the impact of formulary changes. At present the DQTC has no mandate or resources for such activities.

4.11 The Committee therefore recommends that the DQTC's terms of reference be reviewed by January 1, 1991 and consideration be given to:

a) An expanded mandate that authorizes more effective evaluation of drug product cost factors; and

b) An expanded mandate, along with appropriate resources, that will permit the monitoring of the impact of formulary changes.

The Inquiry has also been advised that there should be better communication between the Ministry and health care professionals regarding formulary developments. It is essential that health care professionals have a greater knowledge about what the DQTC does and why particular decisions have been made regarding product inclusions and exclusions and product interchangeability. If our recommendations regarding the new formulary are adopted there will be an increased need to acquaint health care professionals, in particular prescribers, with the criteria for using limited use products.

4.12 The Committee therefore recommends that the Ministry and the DQTC become more active in regularly communicating with health care professionals about formulary benefits and the review process.

4.3 Special Authorizations

The recommendations regarding the special authorization (SA) program, as well as a longer version of the discussions leading to them, were first published in the second quarterly report of the Inquiry.

The Ontario Drug Benefit Act (1986 Sec. 8(1), Unlisted drugs, special case) provided authority for SAs. The program started in 1974 when the ODB formulary list was originally being created. The original intent was that only approved products were to be on the formulary list, and the numerous products on the market at the time made the task of choosing those drugs to be listed as benefits extremely difficult. If a product was not on this list, but was considered vital for good health care in a particular case, the prescriber could obtain an SA by making a telephone call to the program's executive director. The context must be remembered: there were relatively few beneficiaries under the plan; requests for drugs not listed in the formulary were infrequent; telephone approval was manageable. This changed in 1975 when ODB coverage was extended to all persons over 65 years of age; the SA program evolved rapidly from one which received a few informal calls from a limited number of physicians, to the extremely complex and expensive one of 1988.

Recent growth in the cost of the program had been alarming. As recently as 1979, the cost of the SA program was less than $3 million; in 1987, the last reported year, there were almost a quarter million requests for products not listed in the formulary and the estimated cost was almost $50 million. This program includes items other than drugs as well, namely oxygen and allergens, but the annual cost of drugs under the program had grown to about $20 million.

The recent rapid growth in the cost of the overall ODB program can be attributed, in part, to the increase in the cost of the special authorization program: the portion of the ODB budget devoted to SAs has increased by 400 per cent in eight years, from less than 2 per cent of the ODB total in 1979 to over 8 per cent in 1987.

Approximately 2,400 drug products were listed in the July, 1988 ODB formulary; in addition, some 1,600 drugs had been granted SA status. In the process, SAs ceased to be

"special" as originally intended. The SA list had become a second "mini-formulary," but without the safeguard of the products having to meet the criteria required for listing in the ODB formulary.

Some products which failed to receive approval after expert examination by the DQTC were nevertheless to be found on the SA list. This resulted in the anomalous situation where chemical entities which had been judged by a Ministry-appointed group of experts to be of very limited therapeutic value were paid for by taxpayers' dollars under the SA program.

The absence of the cost-containing competition mechanism of interchangeability posed a further problem with respect to SA drugs. Interchangeability ordinarily ensures that residents of Ontario have access to high quality generic equivalent drugs at a lower price. But SA products were not construed to be benefits under the existing legislation for the purpose of determining interchangeability. Therefore, even when a generic product of apparent equivalence to one on the SA list existed, it could not be substituted (product-selected) by the pharmacist because interchangeability had not been evaluated or certified. In other words, the generic drug could not be substituted until an original drug was listed in the formulary and a generic drug was certified to be interchangeable.

The Committee was informed that this permitted some manufacturers to avoid generic competition. The loophole occurred when a manufacturer did not apply to the Ministry for approval of its drug product for formulary listing. In the absence of that first listing, no generic alternative, potentially interchangeable and available at lower cost, could be listed. In the meantime, the original, unlisted product was widely available and paid for by the taxpayer through the permissive SA program.

For these reasons the Committee strongly believed that the SA system was not acceptable. If a drug product is safe, useful and cost-effective it should be listed in the formulary. If it is not, it should not be eligible for reimbursement. The removal of these non-approved products from reimbursement status, or the imposition of special conditions on their use, should result in improved care for patients and lower drug costs for the taxpayer.

The Committee therefore made the following recommendations in its interim report of December, 1988:

4.13 That the special authorization program be discontinued in its present form.

4.14 That all drug products to be authorized for payment under the Ontario Drug Benefit program be approved by the DQTC. (See recommendation 4.20 for the transition period.)

4.15 That all drug products authorized for payment by the Ministry of Health be listed in the formulary with specifications of the conditions, if any, under which they are eligible for coverage under the Ontario Drug Benefit plan.

4.16 That all drug products for which special authorization issuances have been granted be reviewed comprehensively by the DQTC. We further recommend that this be done in order of their frequency of use (commencing with the most commonly used), using the criteria required for formulary listing. All drugs approved by the DQTC after review should be listed in the formulary. Those drugs that fail to gain approval by the DQTC should neither be listed in the formulary nor be eligible for payment by the Ministry of Health

4.17 That the formulary contain two categories of drugs: *regular use* and

***limited use*. The cost of regular use drugs should be reimbursed whenever they are prescribed and dispensed to persons eligible for Ontario Drug Benefit programs.**

***Limited use* status may be granted to other drug products that will only be reimbursed under conditions determined by the DQTC and set forth in the Ontario Drug Benefit formulary. For example, *limited use* status may be granted when one or more of the following conditions apply:**

a) when the limited therapeutic conditions that were determined by the DQTC and set forth in the Ontario Drug Benefit formulary have been met;

b) when *regular use* drugs have been tried and found ineffective, or have caused an adverse effect for a particular patient; and

c) when alternative *regular use* drugs are contraindicated, due to concomitant therapy or to particular patient characteristics.

It would be the professional responsibility of the prescriber to verify that the condition(s) have been met.

4.18 That the conditions and restricted indications, if any, under which drugs will be authorized for reimbursement be clearly indicated. This may be done through appropriate footnotes or other means in the formulary.

4.19 That all drug products for which past special authorization issuances have been granted, once they are reviewed by the DQTC, be caused to fall into only one of the following categories:

a) Formulary listing with regular use status;

b) Formulary listing with limited use status; and

c) Ineligibility for reimbursement by the government of Ontario.

4.20 That during the transition period, until the DQTC is able to review drugs for which special authorization issuances have been granted, all current special authorization drugs awaiting review be permitted to maintain their special authorization status. However, there should be a strict moratorium on the addition of any new products to special authorization status.

4.21 That the DQTC establish a mechanism to expeditiously review new drugs which are major therapeutic advances.

The Committee did not recommend the specific procedures by which these recommendations were to be implemented.

The implementation of these recommendations should improve the quality of health care available to persons eligible for benefits under the ODB program. Drug products that do not meet the standards set by the DQTC would not be included as benefits. Limited use drug products that are demonstrably effective in certain clearly delineated circumstances would be benefits only if prescribed in that way.

Further, full implementation of these recommendations should reduce government expenditures for drugs. While the Committee cannot accurately predict the savings to the ODB program resulting from these recommendations, they are expected to be in the order of millions of dollars annually.

Implementation should also provide considerable administrative advantage to MOH staff, pharmacists, physician prescribers and nurses. The Ministry would not need to authorize and process SA requests; prescribers and their staff would not have to place calls to receive SA approval numbers. Pharmacists would not require the extra

reimbursement forms. The time saved should translate into both cost savings and increased professional productivity.

These recommendations were partially implemented by the Ministry, commencing in the summer of 1989. However, as this final report is being prepared a 'list of non-formulary benefits', containing many of the highly reimbursed products which were intended to be eliminated, persists. These products are still being reimbursed under the old procedures. Therefore, although the costs of the program have decreased, the monthly expenditure at the end of 1989, excluding oxygen and allergens, was still $1.1 million, compared to $1.7 million per month in 1988.

4.4 Generic Drug Product Substitution

The Inquiry believes the quality of drug products, both innovative and generic, that are used in Ontario to be excellent. It is not necessary to examine this issue in greater detail but some problems with drug substitution deserve discussion.

In Canada the federal HPB is legally responsible for ensuring that drug manufacturers and their products fulfil the requirements of the Food and Drugs Act.

For new submissions, comprehensive data on toxicology, pharmacology and therapeutics of drug products must be submitted for review to the HPB. This includes extensive information on controlled clinical trials in four phases. In contrast to this extensive and expensive process, generic products only require evidence of bioequivalence, in addition to certain manufacturing data.

The HPB has recently published "Premarketing biopharmaceutical requirements."[1] The author, Dr. Mattok, stated that for a generic product the requirements will be limited to establishing that the rate and extent of drug absorption between the test and reference products do not differ by more than is judged to be clinically significant. Unfortunately the definition of just what is clinically significant seems not to have been examined. Rather, various measures of drug absorption as reflected by the AUC, Cmax and Tmax[2] have been utilized; since 1981, the guidelines have established an 80 per cent rule to indicate bioequivalence. In other words, the relative AUC must be between 80 per cent and 125 per cent of the defined standard, and that range is not deemed a clinically significant difference. Therefore the "equivalent product" must fall in the range 20 per cent below to 25 per cent above the standard.

Mattok states that the above criteria should apply to most drugs, but each drug product should be considered on its own merits. There is no information available to suggest that generic products currently marketed have been considered by any other criteria. In particular, there is no evidence that clinical studies have ever been required.

It is highly likely that for most types of drugs (eg. antibiotics) no clinical problems are likely to arise under these guidelines. However, for other drugs (where there are critical relationships between the plasma concentrations, bioavailability and clinical effect) the validity of these limits is untested. For example, a number of years ago, several digoxin preparations, where the bioavailability was not acceptable, were prevented from being marketed. Only one digoxin preparation is now marketed in Canada.

[1] Mattok, G.L. "Premarketing Biopharmaceutical Requirements." *Drug Information Journal.* 22:143, 1988.
[2] Area under the curve, maximum serum concentration, time to maximum concentration.

The HPB has the authority to utilize an expert advisory committee on bioavailability, but for many years this committee has been inactive. Only recently has the committee begun developing criteria for designating the bioequivalence of various dosage forms.

Because of these and other issues, the MOH has chosen to rely on the DQTC to advise on questions of interchangeability. Generic drug product substitution has saved Ontarians very large sums of money (see section 5.1), and considering the enormous number of prescriptions for which generic substitution has been made, there have been relatively few problems.

The present program in which the DQTC advises on the status of interchangeable drug products applies only to Ontario, but we believe that a similar system would better serve all Canadians. Because health care services are primarily a provincial responsibility in Canada, and the main impetus for generic substitution programs is the economic benefit which accrues to the provinces rather than to the federal government, this is difficult to achieve. The potential benefits in cost-savings, however, are obvious. We are recommending (see recommendation 5.1) that the government of Ontario take the lead in promoting federal-provincial and inter-provincial agreement for a single Canada-wide policy and standard regarding drug interchangeability.

Product selection by pharmacists, or substitution of one brand of product for another, can cause problems for some patients, although this is rare. Isolated cases of adverse reactions have been reported when patients stabilized on one product were given another brand of the same drug. Such reactions have occurred with changes from generic to brand name product, from brand to brand, from one generic to another and from brand to generic. In 1987 the Ontario Medical Association (OMA) council approved the following recommendations: "That for patients undergoing repeated or prolonged pharmacotherapy, the OMA recommends that physicians write 'no substitution' on such prescriptions" and "that the OMA requests pharmacists ensure that patients receive the same pharmaceutical product on an ongoing basis for prolonged pharmacotherapy." This problem continues to cause concern to physicians and their patients.[5]

It seems that the concern lies in the switching of products, rather than an inherent problem with the generic or the innovator drug. It is very difficult to reconcile an unlimited taxpayer-supported "no-substitution" policy while attempting to maximize the economic benefits of using the lowest price equivalent. The "best buy" for the pharmacist may vary from month to month; hospitals buying in bulk may get an especially good deal on a product that may not necessarily be the one used by community pharmacists filling a repeat prescription for the patient after discharge from hospital. These issues are especially important when new generic products are introduced.

Consumers are surely entitled to know what medications they are taking and we have received many submissions making the point that patients should be informed when product substitution occurs. Without this information, neither patient nor physician can properly assess changes that might, or might not, be medication related. It may be that many anecdotal reports of adverse drug reactions following product substitution are analogous to placebo effects, but they are no less important for that. While largely undocumented, some reactions may potentially be attributable to excipients (non-pharmacological substances in the product) and to bioavailability differences.

[5] Mahon, W.A. and Druck, M.N., Cardiovascular Update, June 1989, pg. 15-18.s

The Committee has carefully considered the conflicting advice we have received concerning generic product substitution, and has concluded that, on balance, the present Ontario government policy is in the best overall public interest. Moreover, except for rare situations, it is our conclusion that the substitution of drug products that have been judged by the DQTC to be interchangeable does not reduce the quality of pharmacotherapy, although it clearly does reduce the cost of the drug program.

4.22 The Committee therefore recommends that while the present Ontario policy of drug interchangeability, which promotes generic drug substitution and price competition, should be continued:

a) The Ontario College of Pharmacists direct pharmacists to refill prescriptions with the same product as originally dispensed when its price is equivalent to competing products. (It is understood that when there is a substantial price difference, pharmacists will dispense the drug product priced at the level at which they will receive reimbursement.)

b) "No-substitution" prescriptions no longer be included as benefits under the ODB plan; where the patient requests that the specific product prescribed be dispensed, the patient should pay for the difference in price above the lowest cost product for which the pharmacist will be reimbursed.

c) The Ministry of Health, on the advice of the DQTC, establish a mechanism whereby a physician can request that a specific product be permitted as a benefit (the cost of which would be fully reimbursable to the pharmacist) for those very rare situations where a particular patient cannot tolerate or benefit from the lowest priced product.

d) Policy and, if necessary, legislation be altered to require pharmacists to inform both patients and prescribers that product substitution has occurred.

e) When a new generic preparation first comes into general use, the Ministry of Health require the generic manufacturer to publicize appropriate information to prescribers, as innovative manufacturers now do.

4.4.1 Interchangeability – Product Selection

The bulk of section 4.4.1 was found in the third quarterly report of the Inquiry.

When brand name products have been marketed for a period of time and have proven commercially successful, the drugs will often also be made available in "generic" versions. These are usually, though not always, manufactured by companies other than the ones which introduced the primary products. The MOH has the advice of the DQTC, which reviews these drugs and determines which of them are interchangeable. If, in the expert opinion of the DQTC, two or more products with the same chemical composition of active ingredients produce very similar effects in human beings, they are considered interchangeable. This determination of interchangeability is made when either the bioavailability of the products (e.g., drug blood levels) and/or the clinical therapeutic effects are sufficiently similar so as to be virtually identical.

An important landmark in the history of Canadian drug programs was reached in 1972 when Ontario amended the Pharmacy Act, permitting pharmacists to dispense one or other of interchangeable products, a process called "product selection." The government of Ontario accepted the legal responsibility of ensuring the therapeutic equivalence of interchangeable products.

If two or more products are determined to be interchangeable it is clearly desirable, in most instances, to select the least expensive product; experience in the marketplace has shown that when more than one version of a drug becomes available the price falls.

The regulations pursuant to the Ontario Drug Benefit Act, 1986 and the Prescription Drug Cost Regulation Act, 1986, specifically permit pharmacists to substitute a lower priced product that is deemed interchangeable for a specific product that a physician prescribes. Because the ODB plan will only reimburse pharmacists for the lowest priced drug of two or more interchangeable products, the pharmacists have a powerful incentive to dispense the least costly product.

A limitation results from the wording of the 1986 legislation,[4] according to which interchangeability can only be determined if at least one of the products is currently listed as an Ontario drug benefit.[5]

Therefore, the substitution cannot be made at the present time if the product has not been listed in the formulary. The extension of interchangeability to the right to substitute non-formulary products would result in savings for consumers at large; they would have more situations in which, on the advice of their physicians and pharmacists, they would be able to choose between equivalent products of different prices.

Representations to the Inquiry in submissions from certain companies and associations (for example the Canadian Drug Manufacturers' Association and Apotex Limited) have urged that the issue of interchangeability of drug products be separated from that of availability as a benefit under the ODB program. If the DQTC were empowered to make recommendations with respect to the appropriateness of interchangeability of two or more drug products, the purpose of those recommendations should be irrelevant. It should make no difference whether or not a product is to be listed in the formulary, because decisions with respect to interchangeability are not logically or therapeutically related to the decision to have a drug paid for by the ODB program.

4.23 The Committee therefore recommends that the DQTC be empowered to review applications and make recommendations to the Minister of Health with respect to the interchangeability of drug products independent of the status of the products as benefits under the Ontario Drug Benefit program. If it is deemed necessary to change the legislation or regulations to make this possible, the appropriate change should be initiated.

[4] "Each product that is listed in Schedule 1 of a particular strength and dosage form of a drug is interchangeable with each other such listed product.", O. Reg. 690/86, s.2, and "In this Regulation, 'original product' means the original source of a drug product in a particular strength and dosage form that is designated as a listed drug product under Ontario Regulation 689/86 (General) or that was listed as a drug product in the PARCOST C.D.I. prescribed under Ontario Regulation 839/84;" O. Reg. 690/86s. 1, pursuant to the *Prescription Drug Cost Regulation Act*, S.O. 1986, C. 28.

[5] A benefit is defined as a product, listed pursuant to the Regulations to the 1986 Acts, for which the government will reimburse the pharmacists if the person for whom it is prescribed is an eligible beneficiary; the list of such benefits is the Ontario Drug Benefit formulary.

Chapter V
Acquisition of Drugs

Chapter 5 examines both innovative and generic drug manufacturers and the growth and profitability of the industry. It discusses the best available price concept and makes recommendations relating to drug pricing. The chapter also recommends a limited formulary for smaller hospitals, nursing homes, homes for the aged and community practice.

5.1 Role of Manufacturers

5.1.1 Structure of the Manufacturing Industry in Canada

The structure of the pharmaceutical manufacturing industry in Canada has been largely determined by the way in which manufacturers respond to federal patent and drug approval legislation. Chemical entities, including pharmaceuticals, are usually discoveries patentable under federal legislation. Legislation in most of the western world's countries provides for patenting of chemical discoveries, but the exact provisions vary according to the jurisdiction. Generally, a company which has discovered or received a license for a pharmaceutical chemical will protect it by patent in the major western nations and will seek to maintain the market exclusivity granted by patent protection for as long as possible.

The health service authorities of most countries also impose a procedure for obtaining approval of the chemical before it is marketed. Establishing proof of safety and efficacy takes many years of complicated and expensive testing and review. Because of the enormous costs of developing, registering and marketing original pharmaceuticals,[1] most manufacturers of new chemical entities are multi-national companies, largely based in the United States, Europe and Japan (see table 5.1).

The Canadian industry is composed primarily of Canadian subsidiaries of the large multinationals, as shown in table 5.2. The last large domestic manufacturer of innovative pharmaceutical products, Connaught, recently sold controlling interest to the Institut Merieux, a Rhone-Poulenc subsidiary from France.

For historical reasons Canada, accounting for approximately 2 per cent of the total western world market, has no independent manufacturers of original pharmaceuticals and the local industry consists mainly of manufacturing and distributing subsidiaries.

At the same time, it is of interest that Canada's pharmaceutical market has been growing faster than the average rate for the western world. According to Scrip,[2] the international newsletter of the industry, the 1989 world market increased about 13 per cent over 1988; Canada's market increased 16 per cent over

[1] The costs to discover and develop a new drug are, on average $150 million, according to the brief by Rhone-Poulenc (# 24-A-3200). This is confirmed by a statement that it costs more than US $125 million, in Scrip, Review Issue 1989, p.1.
[2] Scrip: World Pharmaceutical News, PJB Publications Ltd.: London, Review Issue 1989, p.7.

Table 5.1

Top 15 Pharmaceutical Companies Worldwide, 1988-89[1]

Company	Pharma sales ($ mill)[2]	% change[3]	Pharma and total sales
Merck & Co. (U.S.)	4,983.7	+17.9	83.9
Glaxo (UK)	4,577.8	+35.7	100.0
Hoechst (WGer)	3,958.0	+12.7	17.0
Bayer (WGer)	3,712.6	+20.8	16.1
Ciba-Geigy (Switz)	3,531.7	+11.4	29.3
Takeda (Japan)	3,471.4	+26.6	64.8
Am Hom Prod (US)	3,218.0	+10.0	58.5
Sandoz (Switz)	3,147.0	+15.5	45.4
Eli Lilly (US)	2,679.8	+12.5	65.8
Abbott (US)	2,599.0	+11.4	52.6
Pfizer (US)	2,539.0	+8.9	47.1
Warner-Lambert (US)	2,509.0	+11.2	64.2
Bristol-Myers (US)	2,508.8	+13.2	42.0
Eastman Kodak (US)	2,500.0	NA[4]	14.7
Roche (Switz)	2,410.2	+16.3	40.6

[1] Figures are for the year ended December 31, 1988, except Glaxo (June 1989) and Takeda (March 1989);
[2] Dollar conversions are based on average annual exchange rates for 1988;
[3] Percentage change in US dollars over previous year;
[4] Pharmaceutical sales relate to Sterling Drug, which was acquired by Kodak in February 1988, and figures for the previous year are not available.

Source: Scrip, Review Issue 1989, p.8.

the same period, at a time when the world economy only grew by 4 per cent. The growth rates and estimated values of different markets are listed in Table 5.3.

Due to the nature of patent legislation, the manufacturing industry is divided into two main groups: innovative and generic.

In the **brand-name** or innovative drug manufacturing segment, patented pharmaceutical products are manufactured by the inventor, or by firms licensed to sell the product by the inventor.

In Canada, federal legislation was introduced in 1969 that obliges manufacturers to grant compulsory licences to import and sell pharmaceutical products to firms which pay royalties to the holder of the patent. This compulsory licensing legislation was responsible for the growth in Canada of that segment generally known as the **generic** drug industry, which manufactures and sells generic versions of chemical entities which have large enough markets to justify duplication. In Canada, the companies in this segment of the industry are largely Canadian-owned manufacturers of generic versions of medications whose patents have expired, as well as those which are still under patent but for which the company has received a compulsory license.

Table 5.2

Corporate Ranking 1988
Pharmaceutical Companies

National	Ontario
1. Glaxo	1. Glaxo
2. Nordic	2. Apotex[1]
3. Merck	3. Novopharm[1]
4. Wyeth	4. Nordic
5. Squibb	5. Merck
6. Geigy	6. Squibb
7. Apotex[1]	7. Merrell Dow
8. Novopharm[1]	8. Geigy
9. Parke Davis	9. Wyeth
10. Merrell Dow	10 Parke Davis

[1] Canadian-owned companies.

According to the first annual report of the federal Patented Medicines Prices Review Board (PMPRB)[3] the total factory gate[4] sales of the pharmaceutical manufacturing industry in Canada were $3.1 billion in 1987, which represented retail sales of approximately $5.9 billion. These figures include medicines under patent as well as off patent, medicines for both human and veterinary use, and both prescription and over-the-counter medicines. Of the $3.1 billion factory gate sales, roughly 32 per cent, or $1 billion, represented sales of the 423 patented drug products on the market. The $1 billion sales are divided into different markets: community pharmacy 34 per cent, wholesaler 31 per cent, hospital 28 per cent and other 7 per cent.[5]

Generally, the companies that form the brand-name or innovative segment of the industry belong to the Pharmaceutical Manufacturers Association of Canada (PMAC). "The 41 members that constitute the Ontario chapter of PMAC provide employment for 9,000 Ontarians. In 1985 they had sales revenue of more than $1 billion, held assets of more than $980 million and paid $97.6 million in taxes to government and $305 million in wages and benefits to Ontario employees."[6]

The generic segment of the industry is spear-headed by two major firms, both located in Ontario, and several smaller companies, most of which belong to the Canadian Drug Manufacturers Association: "There are currently 21 member companies—11 in Ontario, nine in Quebec, and one in British Columbia."[7] Although exact sales figures are unavailable because the two major companies are privately owned, Canadian sales in the generic segment are about $380 million,[8] or approximately 8 per cent of total Canadian factory gate sales. The structure of the

Table 5.3

World Pharmaceutical Market
Estimates, 1988

Market	($ Million) Estimated Market Value	Percentage World Market	Percentage Growth
United States	17,900	28	15
Japan	15,100	23	6
West Germany	5,300	8	8
France	4,400	7	16
Italy	4,300	7	15
United Kingdom	2,300	3	13
Canada	1,500	2	16
Spain	1,500	2	16
Rest of world (exclusive East Block)	12,700	20	21
Total	65,000	100	15

Source: Scrip, Review Issue, 1989, p.7.

[3] Patented Medicines Prices Review Board, *First Annual Report 1989*, p.3-4.
[4] This includes sales to distributors as well as sales to hospitals and retail or community pharmacies.
[5] PMPRB, Annual Report, 1989.
[6] PMAC brief, #114-3100, p.5.
[7] CDMA brief, #53-3100
[8] IMS Canada, Share of Market by Region-Drugstores, January to June 1989. The generic companies included in this total are : Apotex, Novopham, Horner, Technilab, ICN, Pharmascience, Prodoc and Drug Trading. Total annual sales in Canada are quoted there at $3,747.3 million.

Ontario Drug Benefit (ODB) plan reimbursement system in Ontario is such that sales of generic products hold a higher segment of the market in this province, totalling 14 per cent.[9]

The pharmaceutical industry in Canada is profitable. In terms of performance and profitability, compared to other industry segments, the pharmaceutical industry rates highly, as illustrated in table 5.4.

Relative to manufacturing in general, the industry utilizes fairly low fixed assets compared to its equity investment. The cost of sales is less than 50 cents on the dollar, compared to a total manufacturing industry average of almost 80 cents, and profit after tax on equity is nearly 25 per cent, compared to a manufacturing industry average of less than an 11 per cent. This pattern has been consistent over the years; more than 30 years ago "Dr. John M. Blair, the chief of the Federal Trade Commission division of economic reports (U.S.), presented the following ...as a comparison of rates and returns after taxes in selected industries (1957):

Drug	21.4
Petroleum refining	12.8
All manufacturing	11.0"[10]

Internationally, the pharmaceutical industry is also one of the highest performers. As can be seen from Table 5.3, international market growth has been high: 13 per cent for 1988 over 1987. Leading individual companies have performed even better than that, as can be seen from table 5.5.

Although wholesale distributing issues are discussed in detail in chapter 6, a brief discussion at this point will augment the description of the structure of the industry. Although many of the manufacturers in Canada have their own distribution systems and sell directly to hospital and retail pharmacists, roughly half of the products sold to pharmacies in Ontario are distributed through wholesale distributors. (Generic manufacturers generally distribute directly; no general rule applies to the brand-name manufacturers.) The largest distributor in Ontario is a cooperative owned by pharmacists. Although some manufacturers predominantly distribute either directly or through wholesalers, almost all will do some of each and the proportions vary.

Manufacturers sell drug products to two major types of buyers, retail pharmacies and hospitals, either directly or through wholesalers. These marketplaces differ quite radically. Many of the drugs sold to hospitals must be administered by injection, rather than taken in oral form. The drug costs of hospitals are not paid directly by the province, but form part of the global budget of the institution. Often hospitals purchase by way of tender, or group purchasing committees negotiate terms for member hospitals. The Ontario Hospital Association (OHA) and Carecor (the Metro Toronto group of hospitals) have purchasing programs for their members; these are, respectively, Hospital Purchasing Program (HPP) and Hospital Purchasing Inc. (HPI). This subject is examined in greater detail in section 5.2.

In Ontario, individual pharmacy owners are responsible for the purchasing decisions for their stores; in the case of chains, the central purchasing group may assist. Even for the largest chain stores, drug purchases are not made by way of tender and the actual terms of purchase are not regulated by the province. At the same time the province has considerable indirect influence on purchase price and terms because it reimburses pharmacists for those products on the list of eligible benefits for beneficiaries of the ODB program (see section 4.1).

[9] Ibid.

[10] Klass, Alan, *There's Gold in Them Thar Pills*, Penguin Books: U.K., 1975, p.75.

Table 5.4

Selected Corporation Ratios, 1986

	No.	FA/[1] EQ.[2]	CoS/[3] SLS[7]	PAT/[4] CAP.[5]	PAT/ EQ.	PAT/ INC.[6]
Pharmaceuticals	132	40.5	49.6	22.7	24.8	9.5
Total Chemical and Chemical Products	1179	74.8	69.4	5.6	8.1	3.9
Total Manufacturing	43161	70.6	79.9	7.8	10.8	4.3
Total Non-Financial Industries	403742	104.9	77.5	4.9	8.2	3.1

1. Fixed Assets, 2. Equity, 3. Cost of Sales, 4. Profit After Tax, 5. Capital Employed, 6. Total Income, 7. Sales.

Source: Statistics Canada, Corporation Financial Statistics, 1986, Cat. 61-207.

However, the terms of sale with respect to the manufacturers are regulated by the province. Manufacturers submit prices to the government for listing in the formulary, but the best available price (BAP) can be confirmed through other sources of information. BAP is defined as the lowest price for which that product is available in Canada for sale in Ontario. The Ontario Ministry of Health (MOH) has the authority to investigate manufacturers, wholesalers and pharmacists to ensure they are complying with the requirements of the legislation by submitting accurate price data.

If they have been found to contravene the Act, manufacturers may be penalized by having the formulary price lowered or the product "delisted" from the formulary. Pharmacists, who are reimbursed at BAP, are understandably reluctant to pay the manufacturer more than the listed price. As a consequence, for those products which are listed, the price set by negotiation between the MOH and the manufacturer tends to be the Ontario-wide, non-hospital price for the product. This process affects most of the drug products sold through pharmacies in the province, as very few drugs which are not listed in the formulary succeed in gaining an appreciable share of the community market.

5.1.2 Federal Regulation and Influence on Market Structure

5.1.2.1 Health Protection Branch: To be legally marketed in Canada, a drug must be approved for sale by the federal Health Protection Branch (HPB) of Health and Welfare Canada. [There are exceptions; for example, drugs which are undergoing testing in Canada may be sold in limited circumstances under the Emergency Drug Release program.]

The approval process for new drugs is complex. Prior to commencing any clinical trials in human subjects, the manufacturer must obtain the permission of the HPB. The first step is the "preclinical new drug submission." The supporting documentation for this includes all chemical composition and manufacturing details, as well as the results of all laboratory and animal studies performed. There are three phases of clinical trials. Phase I trials are those performed among a small group of healthy human volunteers; phase II trials involve a small group of individuals suffering from the disease or illness the drug is intended to treat; phase III trials are performed among a large group of people with the disease or illness.

Table 5.5

Top Pharmaceutical Companies Worldwide by Profitability, 1988-89[1]

Company	Profit ($ millions)	Sales ($ millons)	Margin (percentage)[1]
Zenith	18.8[6]	28.4	66.2
Connaught	86.0[5]	150.5	57.1
Ares Serono	128.5[2]	355.2	36.4
Beecham	687.9[3]	2,006.1	34.3
J&J	789.0[2]	2,358.0	33.7
Merck & Co.	1,806.2[4]	5,473.4	33.0
Abbott	773.0[2]	2,599.0	29.7
Eli Lilly	968.7[2]	3,271.8	29.6
Egis	50.8[6]	171.8	29.6
Warner-Lambert	725.0[2]	2,509.0	28.9

1. Profit as percentage of sales; 2. Operating profit—Eli Lilly's figures relate to the human health segment; 3. Trading profit; 4. Pre-tax operating profit —Merck & Co's figures relate to human and animal health products; 5. Pre-tax profit; 6. Net profit.

Source: Scrip, Review Issue 1989, p.8.

An important part of the process is the approval of the product monograph, a document which lists the indications, contraindications, side-effects, dosages, etc. This information is required by the physician or dentist in order to properly prescribe the product. Changes to the ways in which the drug is to be used, including the addition of indications for which the drug is appropriate (adding an indication will increase the market for the product), or other changes in information contained in the monograph, must be first approved by the HPB. Monographs are thus periodically updated as newer and different indications for the drug product are discovered, side-effects are updated and dosage information is changed.

Problems with the approval system and the monograph procedure were reported in the review of the HPB[11] and discussed in the press by Lexchin.[12] The approval process for changing monographs is cumbersome; the procedure is slow and changes may take years to receive approval. Manufacturers whose products are showing promising additional indications (which would result in increased sales) have an incentive to have the monographs changed; there is a corresponding disincentive to the manufacturer to apply for the indications for use of a product to be limited. However, the HPB can require changes in the product monograph, if it determines that there are sufficient reasons for so doing.

[11] Program Evaluation Study of the Drug Safety and Quality Evaluation program of Health & Welfare Canada, p.6.
[12] The Toronto Star, Tuesday, September 26, 1989.

Approval procedures by the HPB are frustratingly lengthy although a recent review [13] concluded that the length of the process is not unconscionable. The manufacturer's wish to start to sell the product must be tempered by the exercise of caution to ensure the Canadian public is protected from unknown adverse drug reactions.[14] The longer approval is delayed, the more reports will become available from other countries where the product is utilized.

The approval requirements for brand name and generic products are different: the innovative brand name product requires extensive clinical studies and many types of tests which confirm its safety and efficacy.[15] The generic drug, which is merely a similar formulation of an existing product which has previously been approved for marketing, requires much less in the way of evidence. Generally the human trials required for generic products are limited to studies by which the manufacturer shows that the product is bioequivalent, or absorbed and eliminated from the human body in the same way as the originator's product.

The federal and provincial jurisdictions play different roles with respect to determination of bioequivalence and drug approvals. "HPB interprets its mandate as one of *verifying* that the safety and efficacy *data* contained in the submission [from the manufacturer] meet the requirements of the Act and Regulations. This does not specifically constitute certification of the safety and efficacy of drug *products* approved for marketing in Canada."[16]

Ontario guarantees product quality through legislation that requires the government to assume legal liability for the substitution of one brand of drug product for another when both are included in the formulary listing interchangeable products. The information gap between what Ontario requires for this guarantee of interchangeability, and what the HPB provides by its approval process, has been filled by an advisory group of experts called the Drug Quality and Therapeutics Committee (DQTC). Decisions about product listings and interchangeability are made by government, which may accept or ignore the advice of this group. The DQTC, among other things, will review the manufacturer's data and make specific determinations of whether or not two brands of drug are bioequivalent. On occasion DQTC has refused to confirm as equivalent certain products which have received approval from the HPB.

5.1 The Committee therefore recommends that the government of Ontario take the lead in promoting federal-provincial and interprovincial agreement for a Canada-wide interchangeability policy. Health and Welfare Canada should be given a wider mandate: in addition to confirming the safety and efficacy of drug products, the approval process should also include a determination of whether the product is bioequivalent to, and interchangeable with, other approved products.

5.1.2.2 Patent Legislation: The amendments to the Patent Act which were embodied in Bill C-22, which came into effect December 7, 1987 "...contained provisions restricting the use of compulsory licences. These licences are not to be exploited or used for pharmaceutical products for seven to 10 years after the drug has been approved for sale by Health and Welfare Canada, depending on the circumstances. ...Patentees can thus be assured of a period of at least seven to 10 years where they have the exclusive right to market a drug product in Canada. This period is called the period of exclusivity. It is during this period

13 Op cit., Program Evaluation Study.
14 Ibid., p.6.
15 The active chemical ingredient is the same in the generic and brand-name product. The other ingredients—fillers, coatings, colours, preservatives, etc., known as excipients—may be different. The excipients generally have no effect on the action of the active chemical ingredient of the medicine.
16 Op cit., Prog. Eval. Study p.8.

that normal market forces are most constrained, thus creating the greatest potential for excessive prices. However, if the board [PMPRB] determines that a patented medicine is being sold at an excessive price, it may restore the potential for competition by removing the Bill C-*22* prohibition on the use of a compulsory licence on the medicine in question and, optionally, on one other of the patentee's medicines. Alternatively, the board may order a reduction in the price of the medicine in question to a level determined not to be excessive."[17]

Prior to the Bill C-*22* amendments, the generic manufacturers could apply for and obtain a compulsory license for a product and market it at any time after its approval. Since the generic brand is generally priced below the equivalent brand-name product, this change in legislation means the province will not benefit from the lower prices for generic versions of new products for several years. New drug products which become listed as benefits in the formulary, and which can be expected to be widely prescribed, will there-fore not have generic competition for at least seven years. This will have the effect of increasing the total drug benefit cost: generally, newer drugs are priced much higher than the older products they replace in a particular therapeutic category. The shift to newer, higher priced products, as well as the addition of a new drug to the prescribing arsenal for an illness or disease which could not be treated previously by a drug, will result in increased costs.

Of course, it may also result in improved health care. Moreover, when an illness is treated more effectively by a new drug there may be savings in other health care costs. An example of this was the marked decrease in the cost of surgery and hospitalization which resulted from the treatment of peptic ulcers by the first of a new class of anti-ulcer drugs.

However, predicting savings from the introduction of new drug products is difficult. The successful treatment of a disease by a medication (or any other intervention) will result in increased costs in the long run, as the treated individual usually lives longer to benefit from additional health care services. Also, a product such as the anti-ulcer drug may be found useful in treating conditions and symptoms in addition to those originally treated by surgery. The net effect may well be both improved treatment and higher costs.

5.1.2.3 Patented Medicines Prices Review Board: When Bill C-*22* was enacted to extend effective patent life, the PMPRB was set up to review the prices of patented products so as to ensure that these are not excessive. The PMPRB reports annually on the general price trends of drugs, and on the research and development expenditure ratios of the patentees and the industry.

According to guidelines published by the board, price increases are deemed excessive only if they exceed the original December 7, 1987 price by more than the annual consumer price index.[18]

The prices of products first marketed after that date are reviewed depending upon the way the board categorizes them:

- new versions of existing drugs (usually additional dosage forms or strengths of medicines already being marketed) will be compared directly to the current price per kilo of the active chemical;
- breakthrough drugs, or drugs which represent substantial improvements over older products, will be compared to the prices of all drugs in the same therapeutic class, and to the median international price;

[17] Patented Medicines Prices Review Board, First Annual Report 1989, p.5.
[18] Patented Medicines Prices Review Board "Guidelines: Excessive Price", July, 1968, p.2

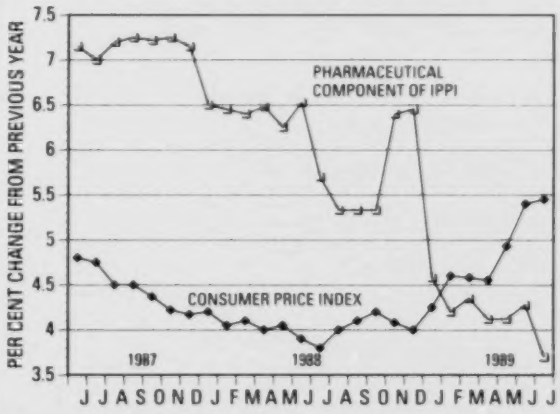
- new drugs which are not breakthrough drugs, or substantial improvements over older products, will be compared to the prices of all drugs in the same therapeutic class;

And if the new price is not greater, it will be deemed not excessive.[19]

This process will likely have the effect of containing future increases in the price of medicines. In the recently published first report of its review of prices, the PMPRB indicated that, by January 1989, the pharmaceutical component of the industrial products price index, IPPI, which before the board's guidelines were promulgated had been roughly 2 per cent above CPI, has fallen to below CPI.

Figure 5.1

Per Cent Change in Values for CPI and Pharmaceutical Component of IPPI



Sources: Patented Medicines Prices Review Board Annual Report 1989

However, the effect on the drug price component of the annual cost of the ODB plan will not necessarily be the same. The mix of drugs prescribed and reimbursed changes as new medications and new forms of existing medications become available. When physicians are convinced that a new drug is even marginally better than older ones in a therapeutic category, they will tend to prescribe the new drug even though it is costlier.

It can be expected that:

- if the newer product is a new dosage form, it will likely replace a generic product which had competed successfully with the previous form of the brand-name drug; it will be priced at the same general level as the previous brand-name product form, which will generally be higher than the price of the generic product;
- if the newer product is a new drug, but not a substantial or breakthrough product, it will likely be priced near the top of the therapeutic class; it will again likely replace a generic product priced nearer the bottom of the therapeutic class;
- finally, if the product is a significant improvement, it will replace one for which there may have been a generic product, but the new price will be governed by the median international price; the replaced product will have been priced somewhere within the therapeutic class, which is likely to be below that of the median international price of that product.

5.1.3 Provincial Regulation and its Influence on Market Structure

A multiplicity of structures, which evolved because of differing provincial regulations, have been added to the federal regulations. The provinces have considerable influence on the behaviour of the industry because they play a powerful role in the way in which drugs are acquired. The larger the provincial share of the Canadian market, of course, the greater the impact is felt nationally. Quebec

[19] Patented Medicines Prices Review Board, Bulletin, July 1989, pages 4 to 6.
[20] Health and Welfare Canada, *National Health Expenditures in Canada 1975-1985*, Ottawa, 1987.

and Ontario combined consume over 60 per cent[20] of Canada's drugs, contain the head offices of almost all the manufacturers, and host 91 per cent of the pharmaceutical research and development performed in Canada.

There is constant pressure from the manufacturers on the two provincial governments to make the economic and political climates more conducive to the development of the industry. The associations representing the companies, and the individual companies themselves, attempt to apply pressure by threatening to move operations and research funds if their interests are not dealt with sympathetically. This situation has existed for years, and there is no reason to believe it will change radically in the near future. The industry's requirements for a large pool of highly skilled labour for manufacturing and university centres for research make a major shift within the country unlikely, even over the longer term. The industry will continue to be centred around Montreal and Toronto because the resources it requires are limited elsewhere in Canada, and because of the capital investment already made in these metropolitan areas.

Among others, the one criterion the industry considers in determining the location of investment is the differing regulations of the two provinces. The Ontario regulatory environment was discussed in detail in chapter 3, and a brief discussion of the Quebec environment follows.

The Programme de médicaments du Québec has a formulary (Liste de médicaments) which contains the products eligible for coverage by Quebec's plan. The products are listed in the Liste for "regular" or "exception" use, the latter applying to drugs where special authorization is required for reimbursement. The concept limits some products from being drugs of first choice, but allows their use when other drug therapy is not appropriate. The decisions to include products in the "Liste" are made by a professional advisory group, le Conseil consultatif de pharmacologie. The reimbursement level for a product is the price in the Liste, or what amounts to the manufacturer's suggested list price. The Programme will reimburse the pharmacist up to the median price listed in the formulary for multiple-source products or, in certain circumstances, the maximum price listed. Priorities are offered to products manufactured in Quebec, providing the price is not more than 10 per cent greater than the median, which is the reimbursable amount unless the prescription is one of no-substitution. The legislation also allows the pharmacist to dispense a lower-cost interchangeable, although this is not mandatory.

Recently, price increases for products listed in the Quebec formulary have been restricted to the level of CPI. Formulary listings are based on the safety and efficacy of the drug as well as the cost with reference to the therapeutic advantage.[21] The political influences on the provincial formulary are evident in the recent example of Famotidine, listed in the July, 1989 with the following footnote: "Ce medicament, dont le Conseil consultatif de pharmacologie avait recommandé l'inscription comme médicament d'exception pour des motifs d'ordre budgétaire, a cependant été inscrit à la liste régulière des médicaments conformément à un décret gouvernemental en raison de retombées économiques." [This drug, which the council had recommended be listed as a drug of exceptional use because of budgetary reasons, was nonetheless included in the regular use list in conformity with a governmental ruling for reasons of economic returns.]

[21] Number 35 of the Liste states on page G.1 G.2: "Normes et critères de sélection des médicaments...12. Pour une même voie d'administration, l'inclusion dans la liste de différentes présentations pharmaceutiques d'un médicament est basée sur le côut de ces présentations en regard des avantages thérapeutiques; 13. L'inclusion dans la liste d'un médicament ayant un effet thérapeutique marginal est fonction du côut de ce médicament."

Quebec's approach is more laissez-faire when compared to Ontario's more interventionist role in the drug marketplace over the last two decades, as outlined in chapter 3. The industry perceives the Quebec position as much more favourable and considers it more conducive to establishment and growth. For example, the Inquiry was told that: "Pfizer Canada has a deep commitment to Ontario, illustrated by its research and development expenditures in the province in 1987/88. The company is committed to increasing overall R&D spending to reach 10 per cent of sales by 1995. However, this pledge to research and develop in the province is made with a degree of misgiving about the investment environment in Ontario. Provinces such as Quebec are offering attractive incentives to manufacturers who locate facilities in their province. Pfizer Canada's tradition of investment in Ontario is now becoming more difficult to maintain in light of investment opportunities elsewhere, but more importantly due to the less than hospitable environment being created by the Ministry of Health and Bills 54 & 55."[22] This sentiment was echoed by many of the manufacturers, including Rhone-Poulenc Pharma Inc.[23]

Chief among Ontario's interventionist policies which concern the innovative industry is the product selection mechanism that encourages price competition in the marketplace, discussed in detail in chapters 3 and 4. To reiterate briefly, the Ontario drug program only reimburses the pharmacist for the lowest-priced equivalent product. The effect has been to increase the market share of the generic manufacturers in Ontario, and to create considerable savings for the provincial government program, particularly in instances where more than one generic product exists. This cost saving has been at the expense of the brand name manufacturers whose share of the market declines markedly when generic drugs are selected by pharmacists.

The sequence of events which creates competition in the prescription drug marketplace is as follows: An innovative manufacturer receives HPB approval for a drug product. Through advertising, promotion and detailing of the product to physicians (and minimally to other health care professionals, including dentists and pharmacists), that product becomes more or less accepted by the medical profession, and gains a certain share of the market in its therapeutic class. The manufacturer also submits the product to the DQTC for approval and inclusion in the Ontario formulary. As indicated in chapter 4, inclusion in the formulary has a tremendous effect on the share of the market which will be taken by a product. The ODB staff negotiates prices and price increases for products listed in the formulary, but the drug manufacturer can control the negotiations for single-source products. The lowest price negotiated for interchangeable products is the price the ODB pays for all prescriptions dispensed for any of them.

If a product is reasonably successful during the period of patent exclusivity, one or more of the generic product manufacturers will be interested in manufacturing an interchangeable product once the patent protection ends. The manufacturers will make application and receive approval from the HPB for their version of the product, and will be able to sell it, either when the patent of the innovator's product expires, or at the effective date of the compulsory licence received by the generic manufacturer. The generic manufacturer will apply for listing in the formulary from the DQTC, which will usually designate the product as interchangeable with that of the innovator. The generic manufacturer stands to gain the highest financial return from a product during the time when it is the only generic equivalent product listed in the formulary.

[22] Pfizer Canada Inc., brief #148-3200.
[23] Phone-Poulenc Pharma Inc., brief #24-3200.

Table 5.6

Price of Lowest Generic Unit Price* as a Percentage of the Highest Brand Name Price: Selected Drugs (By Formulary)

Drug Name	Jul. 87	Jan. 88	Jul. 88	Jan. 89	Jul. 89	Jan. 90
Zantac 150mg Apo-Ranitidine	74.64%	71.09%	74.52%	76.42%	76.4%	76.4%
Cardizem 60mg Apo-Diltiazem				81.8%	74.13%	76.3%
Cardizem 30mg Apo-Diltiazem				81.85%	74.14%	76.3%
Halcion .25mg tab Triaxolam				87.55%	87.55%	75.0%
Tenormin 50mg tab Apo-Atenol				78.59%	78.65%	78.6%
Entrophen 650 mg tab Novasen	89.54%	89.64%	89.64%	89.35%	89.29%	88.8%
Timoptic .5% OphSol Apotimoptic			75.06%	74.2%	72.84%	73.9%
Zantac Apo-Ranitidine	74.71%	71.5%	74.63%	76.52%	76.52%	72.9%
Cephulac o/l Acilac	74.81%	79.95%	80.72%	80.72%	83.5%	79.7%
Tenormin 100mg tab Apo-Atenol				78.77%	78.77%	78.8%
Aldactazide 25mg tab Novo-Spiriozine	104.46%	100.00%	100.00%	104.97%	97.14%	102.0%

* unadjusted

Source: ODB/CDI Formulary

The reimbursement mechanism works to the advantage of the generic manufacturer because the pharmacist, who is reimbursed only at the BAP, will dispense the generic product in all situations where the prescription is for an ODB beneficiary, unless it is a "no-substitution" prescription. Brand-name manufacturers will rarely compete with a generic manufacturer on price. Their usual marketing techniques focus on attempting to persuade prescribers to issue "no-substitution" prescriptions for their product because of its purported advantages.

Table 5.7

Price of Lowest Generic Unit Price* as a Percentage of the Highest Brand Name Price: Selected Drugs (By Formulary)

Drug Name	Jul. 87	Jan. 88	Jul. 88	Jan. 89	Jul. 89	Jan. 90
Adalat 10mg cap Apo-Nifed Novo-Nifed			69.3%	69.03%	73.93%	70.4%
Dyazide 25 & 50mg tab Apo-Triazide Novo-Triamzide	44.75%	46.99%	45.2%	46.4%	47.36%	45.2%
Ativan 1mg tab Novo-Lorazem Apo-Lorazepam	54.47%	57.25%	66.76%	70.00%	71.41%	71.4%
Feldene 200mg cap Apo-Piroxicam Novo-Pirocam	54.49%	54.48%	54.48%	57.04%	55.47%	52.8%
Clinoril 150mg tab Novo-Sundac Apo-Sulin			74.99%	77.85%	77.93%	75.14%
Amoxil 250mg cap Novamoxin Apoamoxin	43.52%	54.8%	54.80%	54.80%	55.93%	53.2%
Robitussin o/l Guaifeneson Guaifeneson-Sugarless	42.68%	47.30%	42.94%	42.61%	41.85%	42.6%

* unadjusted

Source: ODB/CDI Formulary

Several examples of the formulary listing prices are found in table 5.6. As can be seen, if only one generic is listed the price will generally fall between 75 and 85 per cent of that of the innovator's product. For example, Cardizem 60mg is listed in the January, 1990 formulary at .5986 per tablet. Apo-Diltiaz, the generic interchangeable, is listed at .4568, or 76 per cent of the Cardizem price.

Large savings for the ODB program do not occur until at least two generic products are competing to establish the BAP. Examples of prices where there is more than one generic interchangeable product are found in table 5.7. For example, the listed price per capsule for Feldene 20 mg in the January, 1990 formulary, is 1.3562. Novo-Pirocam 20mg is listed at .7514 and Apo-Piroxicam 20mg at .7156, or 53 per cent of the price of Feldene.

At present generic manufacturers who arrive first on the market and in the formulary are guaranteed at least six months' head start in competing for the sizeable ODB market for their product, because the formulary is issued semi-annually. If approval of the second generic product is delayed, the advantageous market position is effectively extended for at least a year.

"...in terms of the total number of prescriptions in Canada, [the two leading Canadian-owned generic companies] are no small lightweights. They ranked number one and two with market shares of 11.9 per cent and 6.6 per cent respectively in 1988... While the entire Canadian market grew by only one per cent in 1988, the two leading generic firms grew by 6 per cent and four per cent respectively. It has been projected that, as existing patents expire over the years ahead, the generic sector will be able to grow three times as fast as it has in the past in Canada."[24]

Since costs and marketing expenses of generic products are relatively low, and the market can be sizeable, the Committee feels that recent initial generic prices have been unnecessarily high.

5.2 The Committee therefore recommends that a generic equivalent of a brand-name product not be listed in the formulary for the first time at a price which exceeds 60 per cent of the reference price of the equivalent brand-name product. That reference price will be the listed price of the brand-name product found in the formulary immediately prior to the one in which the generic product is to first appear.

The marketplace in Ontario is dominated by the price level scheme predicated on ODB reimbursement. But there is also room for decision-making by consumers and their physicians, based on considerations other than the basic ones of equivalency, quality and cost made by the DQTC. If ODB beneficiaries or their physicians, for whatever reason, choose to take or prescribe products other than the ones available at BAP, they should have that option, upon paying the price differential to the pharmacist.

5.3 The Committee therefore recommends that all prescriptions for multi-source products to eligible beneficiaries, whether or not they are inscribed by the prescriber as no-substitution, ordinarily be reimbursed only at the lowest "best available price" for the product. If the pharmacist, at the request of the patient, dispenses a product for which the listed price exceeds BAP, the patient must pay the difference to the dispensing pharmacist. The pharmacist may be reimbursed for a no-substitution prescription of a higher-priced product only when the prescriber has an approved reason for this. (See recommendation 4.22)

5.1.4 Economic Influence

5.1.4.1 Investment: The government of Ontario has to consider the overall economic benefits derived from the pharmaceutical industry according to several criteria. Government policy must determine which industries are best for the provincial economy and which it therefore wishes to attract. The "bottom line" is the economic return to the province for the cost of attracting and keeping that investment. As a major purchaser of drug products, directly or indirectly, the government also has a strong interest in controlling drug prices. The trade-off occurs when the government balances the advantage of keeping drug prices low against the advantage of creating a climate in which drug manufacturers will wish to invest in research and manufacturing activities in Ontario.

[24] PMAC advertising supplement to the December 11, 1989 issue of Macleans Magazine, p.14.

The analysis of costs and benefits, in terms of attracting investment and saving purchasing dollars, will include both the generic and the innovative segments of the industry. The two must be examined in tandem, as policies that encourage the growth of one segment have tended to be detrimental to the other. The analysis is complex and this Inquiry has neither the time nor the expertise to appropriately analyze and balance the implications of policy alternatives in this area. We understand that steps are being taken to perform such an analysis.

However, the government, the manufacturers themselves and available research have all provided information with respect to the funds spent currently on purchases and on investment.

On the one hand, Ontario is the largest single ultimate "purchaser" of drugs in Canada. We use the term purchaser even though hospital drug costs are contained in their global budgets, and even though the drug programs branch of the MOH acts as reimburser of drug costs for those Ontario residents who qualify as beneficiaries under various programs. Each policy with respect to the beneficiaries, and each benefit which they receive at government expense, affects the total amount billed to the Ontario government, and paid by Ontario taxpayers. On the other hand, both financial and human capital are invested by the drug industry in production and in-house research and development, as well as research at Ontario universities, and the Ontario economy benefits considerably.

A study done for the Eastman report[25] estimated that the increased use of generic products sold in pharmacies and hospitals because of compulsory legislation resulted in total savings of $211 million in Canada in 1983. This total was derived from an analysis performed on a basket of drugs. The ODB program, as purchaser, accounts for more than 13 per cent of total Canadian sales ($191.7 million of $1.461 billion total Canadian pharmacy sales in 1983).[26] The 1982 saving to the Ontario government was $27.64 million, or 14.4 per cent, and if that percentage is still applicable to the current ODB expenditure, the saving from generic product use is now $51.91 million on drug costs of $360 million. If the percentage is applicable to total Ontario pharmacy sales of $1.0887 billion, the saving resulting from generic product use is $156.8 million per year.

The approximate balances are as set forth in table 5.8.

In countries which have innovative drug manufacturing industries that make significant contributions to national research and product development, the nation's interest may be served when the innovative side of the industry is favoured over the generic. For countries such as Canada, with a modest indigenous innovative drug industry, it is far from certain that this is the case.

Following the passage of federal Bill C-22 in 1987 there may be a greater incentive for investment in innovative drug research and development in Canada. Ontario has an excellent university-based research potential. In particular, Ontario faculties of medicine are now very positively disposed towards industry/academic collaboration in research. We have received many well reasoned submissions from Ontario universities, and the innovative industry, providing evidence of recent expansion of research facilities and plans for their development. How strongly to support the generic side of the industry, which also provides jobs and contributes to Ontario's well being, is clearly a *political* rather than a health care decision.

[25] *Report of the Commission of Inquiry on the Pharmaceutical Industry*, (The Eastman Commission Report), Ottawa, 1985, p.316.
[26] Ibid., page 80.

Table 5.8

Ontario Industry Segment Comparisons

	$millions R and D	Employment	$millions Sales[1]	$millions Wages	$millons Savings[3]	$millons Savings[4]
PMAC Companies	72	9000	936	305	0	0
CDMA Companies	0	1000	152	34[2]	52	157

Source: [1] IMS Canada, Drugstore, 1988.
[2] Estimate only, based on averaging PMAC wages over 1000 employees.
[3] Based on acquisition costs of drugs reimbursed for ODB plan.
[4] Based on acquisition costs of all drugs in Ontario.

5.1.4.2 Research and Development: Since the implementation of the federal legislation extending the period of patent life exclusivity, the patent holding manufacturers have been increasing the percentage of sales spent on research and development. Most of this money, with a few very noticeable exceptions, is going into clinical rather than basic research.

Canada has not historically been known for high levels of research and development by pharmaceutical manufacturers. "The characteristic strategy of [major international firms] is to carry out much of their basic research near their headquarters...Thus, U.S. firms, which dominate the Canadian market, do 85 per cent of their research in the United States, and most of the rest in the United Kingdom, West Germany, and France. European firms carry out a higher proportion of their research in foreign countries and the favoured location for foreign research is in most cases the United States....The location of significant research in the pharmaceutical industry is principally determined by the location of the parent firm's headquarters, which itself reflects historical evolution of specific skills and interests in that firm and the general scientific infrastructure of the country, but is also affected by the degree to which the host government is willing to aid pharmaceutical enterprises by heavy subsidies, tolerance of high prices, and support of relevant science in universities and institutes."[27]

The federal Eastman Commission analyzed the level of research and development carried out by the firms in Canada, and conducted a survey which established levels of investment and expenditure.

Research and development expenditures in Canada have been gradually increasing according to reported statistics: from $10.4 million in 1967, to $57 million in 1982, to 157.55 million in 1988. The ratios of R&D to factory shipments have been increasing only recently: from 3.5 per cent in 1967, to 3.8 per cent in 1982, to 6.1 per cent in 1988.[28]

The recent increase in the ratio of R&D to factory shipments has been a result of the impact of Bill C-22, which extended patent protection in Canada and carried with it some promises by the industry. Among these was the promise to increase the level of R&D to 8

[27] Ibid., p.423.
[28] Ibid., p.62.

per cent by 1991 and 10 per cent by 1996. This latter figure will bring Canada only up to the average international level. The current level of R&D is estimated at 6.1 per cent to national sales;[29] and 8 per cent to Ontario sales.[30]

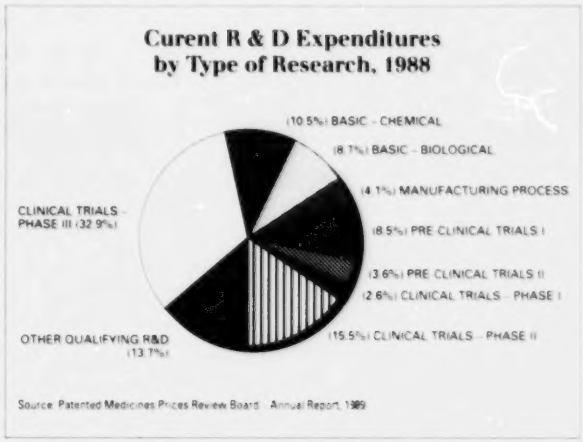
R&D in Canada (figure 5.2) consists largely of clinical research, or research which involves testing of drugs in human subjects, which must be done to obtain marketing approval for the product.

Of the total $157.55 million spent on R&D in 1988, 63 per cent was for clinical and pre-clinical trials. However, the percentage devoted to basic research has risen quite sharply since last reported in 1983. "...in 1983, approximately 15 per cent of research and development expenditures by pharmaceutical firms in Canada were devoted to basic research, a proportion that was slowly rising from 1979..."[31] We now have reports that nearly 20 per cent of our R&D is invested in basic research, so this area has been increasing much faster than the total invested in R&D. "Worldwide R&D spending is estimated at about ($16 billion), on sales of ($160 billion) with about 80 per cent of the expenditure accounted for by the US, Japan, the UK, West Germany, Switzerland, France, and Italy. 85 per cent is spent on new chemical entities, and the ratio of development to research spent is two-thirds/one-third..."[32]

5.1.5 Advertising, Promotion and Education

When discussing the industry and the regulatory systems, it is important to distinguish between the two types of product on the market: single-source and multi-source. The pricing and selling mechanisms are entirely different for these.

Figure 5.2


Curent R & D Expenditures
by Type of Research, 1988
(10.5%) BASIC - CHEMICAL
(8.7%) BASIC - BIOLOGICAL
(4.1%) MANUFACTURING PROCESS
(8.5%) PRE CLINICAL TRIALS I
(3.6%) PRE CLINICAL TRIALS II
(2.6%) CLINICAL TRIALS - PHASE I
(15.5%) CLINICAL TRIALS - PHASE II
CLINICAL TRIALS - PHASE III (32.9%)
OTHER QUALIFYING R&D (13.7%)
Source: Patented Medicines Prices Review Board - Annual Report, 1989

5.1.5.1 Single-source Products: A single-source product is one for which there is only one manufacturer and one brand. These products are still protected by patent and cannot be manufactured under compulsory licence; alternatively, if the patent protection has expired, they have a sufficiently limited market that more than one brand is not judged profitable. The exceptions to this are those products which are not interchangeable; digoxin is an example of this type of product, as are sustained-release products, although the status of the latter is currently under review by the DQTC. A discussion of this issue is found in chapter 4.

A pharmacist who receives a prescription for a single-source product has two main options: to dispense the prescription with the product on hand or ordered for quick delivery, or to turn the patient away and give the business to another pharmacist. A less commonly-used option is to attempt to influence the prescribing decision; that is, for the pharmacist to convince the physician to change the prescription to another product. In the majority of cases, the pharmacist follows the first option and dispenses the product.

[29] Patented Medicine Prices Review Board, First Annual Report 1989. This represents a total research and development expenditure of $164.5 million and sales of $2.7 billion.
[30] 45.32% of the total Canadian research and development costs as reported by the Patented Medicines Prices Review Board in 1988 were spent in Ontario, or $71.5 million.
[31] Ibid., p.422.
[32] Scrip, Review Issue 1989, p.1.

Therefore, for a single-source product, the point of sale is when the physician makes the decision to prescribe it for a specific indication in a specific patient. The thrust of manufacturers' marketing and sales efforts for single-source products will be to influence the physician to prescribe the product in as many situations as possible.[33] The intended result of these efforts is to have the physician choose the particular product over other products that could be prescribed for the problem under management. This, of course, presumes that the physician has the appropriate information and can bring it to bear quickly given the pressures of his or her particular practice.

Manufacturers claim that the majority of the money they spend on advertising and marketing is for the purposes of educating and informing physicians about the proper uses of products. But this cannot account for the entire amount expended on advertising, free sampling and entertaining of physicians; much appears to be for promotional purposes in order to gain the highest market share and sales volume possible. Several of the presentations to the Inquiry dealt with promotion to physicians, and this issue is dealt with in chapter 7.

In an article about information services provided to physicians by manufacturers,[34] the assertion that brand-name manufacturers supply better information to professionals than do generic manufacturers, is challenged. This study was "...to evaluate both research-based and generic pharmaceutical companies with regard to the rapidity and adequacy of their responses to a physician's request for information about a drug interaction."[35] The study discovered no significant difference between the responses.

Because of the importance of physicians as prescribers, most industry expenditures for advertising, promotion and marketing of drug products in Canada are directed to the physician and, to a very small extent with specified products, to the dentist. Recent information shows these costs to be approximately 25 per cent of sales.

For the sale to finally take place, however, the product must be actually acquired by the patient for whom it is prescribed. In situations where the patient pays for the drug out of pocket, the issue of affordability enters the decision process. In situations where the patient has third-party insurance benefits, affordability is of less concern. The main financial issue will be one of cash flow, or "up-front" affordability, if a co-payment is required. Financial considerations generally do not enter into the decision-making process when the patient is covered by the ODB program, because the patient receives the prescription product "free" and the pharmacist is reimbursed directly by the government. Price, therefore, enters into the marketing and sales program of a pharmaceutical manufacturer in a way not generally experienced with other consumer products.

Although drug programs, third party insurers and consumers are all sensitive to total costs of drugs or drug programs, they are less sensitive to the price of individual products. In general, a high value is placed on drugs— as is the case with all health care need— and manufacturers need not be particularly concerned with economic sensitivity when it comes to single-source products. In addition, because the "sales" decision is in two parts— the person who chooses the product (the prescriber) is not the same as the person who pays for it (the patient, the insurer, or the

[33] Based on total sales of $2.3 billion, the PMAC reports its members spending 25 per cent, or $580 million, on marketing and sales. This represents an average of $6,674 per professional (physicians, pharmacists and dentists), or, if pharmacists and dentists are excluded, because the physician is the prime target, over $10,000 per physician.
[34] Lexchin, Joel, and Martin Thomas, "Pharmaceutical Manufacturers' Responsiveness to Physicians' Requests for Information: A Comparison of Brand and Generic Companies," Proceedings of the Second Annual Health Policy Conference, Research and the Health Policy Process Conference, Centre for Health Economics and Policy Analysis, Hamilton, June 1 and 2 1989, pp.197-205.
[35] Ibid., p.197.

Ministry) —the issue of price only affects the second part and rarely enters into the decision to prescribe. Not *all* physicians are aware of the costs of drugs, because many patients, particularly those over 65, generally do not pay for them themselves.

In Ontario, price sensitivity for single-source products has only recently entered the ODB system, because it is only since the Prescription Drug Cost Regulation Act, 1986 that the Ministry has been negotiating price with the manufacturers. Decisions made by the DQTC to recommend for or against listing a particular product have only recently included cost as a criterion.

In Ontario the major indirect "purchaser" of all single-source products prescribed for consumers and dispensed to them is the government itself. There is little incentive for other players to enter into price negotiation with manufacturers. Consumers, prescribers and dispensers are essentially neutral with respect to price. Manufacturers, wishing to optimise returns, have no incentive to minimize price because the volume sold is relatively inelastic with respect to the price charged. The only player with an incentive to reduce prices is the purchaser—the Ontario government.

The government, as purchaser, is extremely limited in the way in which it can influence price where the product is single-source; any influence on the manufacturer is exercised in a voluntary negotiation process. The manufacturer is aware that the only effective negotiating tool available to the province is to refuse to list a product in the formulary if the price is too high. But sales volume is heavily influenced by whether or not the product is listed in the formulary. Manufacturers know that physician prescribing can be influenced by their patients, and a major influence on patient behaviour is whether the patient has to purchase a particular drug him- or herself or will be able to receive it free of charge.

The listing of a product in the formulary will have a major effect on the market share of *that product within its therapeutic class.*

The government should use its influence to attempt to negotiate the lowest possible prices for single-source products, taking into account their benefits and costs when compared to other products available in the same therapeutic class. Comparisons of costs relative to demonstrated effectiveness could be used by the DQTC in its reviews of listings of products, and be included in determining whether products should be listed and generally available, only available on a limited basis, or not listed as a benefit at all.

5.4 The Committee therefore recommends that the concept of best available price be maintained, in preference to other forms of definition of reimbursement price to pharmacists.

To summarise, the brand-name pharmaceutical industry appears to be in sound economic shape. It is over twice as profitable as the average industry in Canada, spends only an average of $4 million to develop a new drug for the Canadian market (based on the 2 per cent share of the world market found in Canada), has exclusive control of that market under the new patent legislation for seven to 10 years, and spends 25 per cent of its sales on marketing and promotion.

The Committee believes that the Ministry should use the listings in the formulary to hold price increases to reasonable limits. As indicated, drug price increases have been above CPI. We therefore propose price increase restrictions for products listed in the formulary, both for general and limited use. If the manufacturer fails to agree to these recommendations, the product should not be listed in the formulary and should not be reimbursed if prescribed for persons eligible to receive ODB.

5.5 The Committee therefore recommends that the price for reimbursement of all drugs in the January 1991 formulary be rolled back to the price at which they were listed in the December 1986 formulary, plus consumer price index increases from December 1986 to January 1991. If the product was not listed in the December 1986 formulary, its January 1991 price should be rolled back to the price at which it was first listed after December 1986 and then increased to a value no greater than that allowed by the increase in the CPI from that date to January 1991. If the CPI adjusted price is higher than the current price, the current price should stand.

We have recommended contributions from various health care professions and from consumers which are both financial and educational. Manufacturers, as stakeholders in the industry, should also be expected to contribute to improving the prescribing and utilization of drug products by making a financial contribution.

5.6 The Committee therefore recommends that, for the period commencing with the formulary which follows the January 1991 formulary and ending in January of 1994, increases of drug prices listed for reimbursement shall not exceed 50 per cent of the consumer price index.

Manufacturers of single-source products have little incentive to service the pharmacist, as the point of sale is the physician. Therefore, government should use its influence as reimburser to negotiate the terms on which products must be made available to the end user, if the product is to be or remain listed in the formulary. The BAP should, as currently defined by legislation, be the net of all deals and incentives. As a condition of listing, manufacturers should undertake to make available that product size on which BAP has been determined, at that listed price, to all pharmacies or wholesalers. This undertaking should be for the duration of the applicable formulary.

The Committee was also told about the increasing spread which has entered the pricing system under the current BAP negotiated reimbursement mechanism. The recurrence of the very situation the new legislation was intended to eliminate must not be tolerated. The legislation, as it now reads, does not prohibit the pharmacist from claiming reimbursement at a level higher than that which was actually paid for the product. It seems that this spread will continue to be a problem for the system unless both the manufacturer and pharmacist are held accountable, and until there is no incentive to make deals which lower the cost, without passing on those savings to the reimbursing body.

5.7 The Committee therefore recommends that the current legislation be amended, with appropriate sanctions, to strengthen the "best available price" concept so that manufacturers are required to sign a binding agreement to make available that product size on which BAP has been determined, at that listed price, to all pharmacies or wholesalers for the duration of the applicable formulary.

5.8 The Committee further recommends that the Ministry of Health vigorously pursue allegations of deals and incentives provided by manufacturers in order to immediately reduce the "best available price" accordingly, if the allegations prove true.

5.9 The Committee further recommends that the legislation be amended to prohibit pharmacists from claiming reimbursement (for the cost component of the prescription price) under Ontario Drug Benefit at a level higher than that which was actually paid for the product.

5.10 The Committee also recommends that the legislation be amended to require pharmacists, when dispensing prescriptions for interchangeable products in the non-Ontario Drug Benefit marketplace, to charge for the cost component of the

prescription price the amount that was actually paid for the product if this amount was less than the best available price.

5.1.5.2 Multiple-source Products: Multiple-source products are those which are sold by more than one manufacturer. Generic product manufacturers will determine which products hold a large enough market share to warrant the investment necessary to market an additional product; they will then attempt to get their generic "copy" of the brand name product approved. This involves approval by the HPB and the determination by the DQTC that the two products are interchangeable.

Multiple source products are marketed quite differently by the brand name manufacturers than are single-source products. The generic manufacturers also employ tactics which differ markedly from those of their brand-name counterparts.

Because the legislation in Ontario requires the pharmacist to dispense the lowest-priced equivalent product to fill so many prescriptions, the point of sale for multiple-source products is generally the pharmacist. Thus the objective of the manufacturer is to influence the pharmacist to buy a particular brand. Economics dictate that the basis for this competition is generally price: pharmacists look to the product which is most profitable. And manufacturers compete on the basis of the lowest price listed in the formulary, for which the pharmacist will be reimbursed when that product is dispensed. The BAP is usually established by one of the generic manufacturers; when the BAP for a particular formulary has been set, other generic manufacturers usually lower their own listed prices to BAP in order to sell their product to the pharmacist. Rarely, in this situation, will the pharmacist purchase a product which is sold at a price higher than BAP.

The brand-name manufacturers usually compete on the basis of factors other than price. The non-formulary market, and the habit of physicians to write "no-substitution" on some prescriptions, enable the pharmacist to purchase and sell the brand-name product. Although non-price competition usually applies to brand-name products, there are notable exceptions. One example is Acetaminophen compound with codeine, 30mg tablet. The price listings in the January 1990 formulary for this multiple-source product were as follows:

Atasol-30	HOR	.0358
Exdol-30	FRS	.0684
Tylenol No.3	MCN	.0368
Lenoltec No. 3	TCH	.0354
Novo-Gesic C-30	NOP	.0365

Following the formulary release, two companies, McNeil (MCN) and Novopharm (NOP), sent letters to the drug programs branch, advising that their BAP was now equivalent to the lowest listed, or .0354. McNeil is considered a brand-name company but it competes—and apparently successfully —on the basis of price. Tylenol No. 3 holds by far the lion's share of the Acetaminophen plus codeine market, illustrating the ability of this brand-name manufacturer to compete successfully, at least in specified products, on the basis of price.

5.2 Hospital Purchasing Plans

Most of the information for the following section was taken from the submissions of the OHA.[36]

Integral to the cost efficiency of the drugs used to treat patients in most hospitals in Ontario is the HPP. As a service to its members, the OHA negotiates the prices of most commonly-needed and used drug products with the manufacturers under this plan.

[36] Ontario Hospital Association Briefs #57-3100 and #57A-3100.

The existence of a limited formulary, and restricted prescribing practices for hospital physicians, controls the number of available drugs within a hospital. This has the effect of both reducing inventory levels and managing the levels of technological expertise required. (In addition to improving the quality of prescribing, it has the effect of removing drugs of less than optimal safety and efficacy.)

"Hospitals acquire drugs primarily by participating in pharmacist-directed group purchasing programs. There are two major Ontario programs: virtually all hospitals outside of Metropolitan Toronto participate in the Hospital Purchasing Program (HPP) of the Ontario Hospital Association, while Hospital Purchasing Incorporated (HPI — a division of Carecor Health Services Incorporated) handles Toronto area facilities. As well, there are a few smaller, regional purchasing groups.

"HPP handles contracts for some 1,100 items, representing various strengths and sizes of approximately 300 therapeutic entities, or approximately 50 per cent of items listed in many hospital formularies.

"The efficacy of group purchasing is widely accepted. For items not covered by group purchasing contracts, hospitals generally deal directly with suppliers to ensure further savings and, as a last resort, may use a more expensive wholesaler.

"Many community hospitals outside major urban centres rely on reciprocal arrangements with local retail pharmacies when purchasing unusual, difficult-to-source items. Choice of suppliers is made based on two primary considerations: quality and cost. Product quality is determined by bioequivalency, product integrity, labelling, packaging and compliance with accepted standards. Fiscal factors include volume, cost, minimum order quantity, the distance of the hospital from the warehouse and company performance.

"The Hospital Purchasing Program of the Ontario Hospital Association estimates that member hospitals **save approximately $2 million annually** based on the approximately $20 million tendered for HPP hospitals." [37]

The HPP uses a committee made up of hospital pharmacy directors to approve the bid list for each drug product; the criteria include cost and product quality. HPP only negotiates the contract with manufacturers. Members are notified of contracted prices and terms for ordering. The member hospital deals directly with the manufacturer on these terms; it is only when problems arise that HPP will deal with the manufacturer on behalf of the institution.

HPI has 46 member hospitals, and the program controls close to 50 per cent of Metro Toronto's market for hospital pharmaceutical products. HPI contracts for $30 million of pharmaceutical purchases.

"Smaller hospitals, particularly those under 100 beds, are faced with unique challenges in the drug acquisition process. Many of them belong to HPP, but because of their size and the small quantities they use, their orders are often under the minimum dollar value required for free shipping. This occurs with direct buying from the manufacturer as well —if the minimum order is $100 or $150 and only one or two items are required, a $10-$25 processing and shipping fee is charged. This results in the use of a drug wholesaler or a local retail pharmacy at premium prices.

"This is substantiated by information from the Lilly Surveys which indicate that across the

[37] Ibid., #57A 3100, p.47.

country, hospitals with less than 100 beds have the highest inventory per patient day and purchases per patient day costs."[38]

This latter point arises not just from the increased purchasing costs of smaller hospitals, but also from the decreased effectiveness of the use of the formulary system as a tool for cost and quality control.

"A formulary limits the number of drugs which must be stocked by the hospital and avoids the acquisition of therapeutic duplicates. The drug products included in the formulary are listed generically, and it is the responsibility of the pharmacy department to determine which supplier will be used for each product.

"In addition to optimizing drug therapy, formularies control drug costs by minimizing drug inventories. This is achieved by limiting the number of drugs, dosage forms and strengths stocked and by selecting the most economical product within a particular category...

"Although well-controlled formulary systems are in place in many of Ontario's medium to large institutions, some smaller hospitals report that their physicians have been allowed to prescribe and obtain whatever they want for their patients, (and) resist any type of control procedure on the grounds that it restricts their right to practice. Even if a small hospital does produce a formulary, doctors may be unwilling to work within that framework. There may therefore be little understanding or support from administration and the pharmacist ends up being the 'policeman'."[39]

"The hospital formulary is 'the foundation of any system to contain drug costs' (Abramowitz, 1984). Most studies have been directed at controlling antimicrobial use since these drugs account for 19 per cent of total drug budget (Rucker, 1982). Several studies have reported savings ranging from 25-55 per cent using various techniques (Craig et al, 1978 and Kunin et al, 1973). These studies, however, do not appropriately address the impact of deleting the antibiotic from the formulary on actual patient care. For example, no study included patient outcome or other measures of improving rational drug therapy (Craig et al, 1978). In addition, cost-effectiveness studies concerning restrictive formularies found that while drug costs fell, other related costs rose (Hefner, 1979). Therefore control of the costs of drug use by deleting formulary drugs should be implemented carefully, with an awareness of its potential consequences on patient care. It should be viewed as only one way in which drug costs could be controlled (Hoffman, 1984 and Plumridge et al, 1984).

"User acceptance is essential for the implementation of a formulary (Hoffman, 1984; Plumridge et al, 1984; and Harding et al, 1985). Change is more likely achieved when there is continual and active participation from users and when information accompanies the guidelines or formulary (Harding et al, 1985). Simple communication of guidelines has little impact and has resulted in the inappropriate use of the formulary (Plumridge et al, 1984). In contrast, lectures, personal contact, individualized feedback and written material promoting formulary use have been found to be more effective on changing drug use patterns (Check, 1980). This suggests that communication should be personalized rather than dictatorial (Lamay et al, 1981)."[40]

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[38] Ibid., #57A-3100, p.40.
[39] Ibid., #57A-3100, pp. 46-47.
[40] Carruthers, G., T. Goldberg, H. Segal and F. Sellers, *Drug Utilization: A Comprehensive Literature Review*, Ont. Ministry of Health, Toronto, Ont., 1987, pp.185-186.

"The basic question remains why even the best formularies still use and/or add drugs whose therapeutic credentials are so inferior. A minor reason for this deviance may be traced to several products for which conflicting opinions on therapeutic merit obtain. Some variance also may emanate from the unique drug requirements of a particular institution or the ascendency theory mentioned above. Most of the variance, however, probably stems from the random appearance of subjective factors that influence the decision-making process exercised by the pharmacy and therapeutics committee. In the terminology of the respondents, sub-optimal drugs get into the formulary because committee members, from time to time, are swayed by 'political considerations'."[41]

For reasons of good drug therapy and economics, the Inquiry supports the concept of a limited formulary. This concept has been employed successfully in many hospitals across Ontario and we believe it should be expanded and enhanced.

Therefore, the Committee has endorsed (see recommendation 7.12) a limited formulary, implemented province-wide, both in institutions and in community practice.

5.3 Third-Party (Private) Insurers

The majority of Ontarians have or can have the costs of their prescriptions covered by private, or third-party, insurers. The various terms and provisions of insurance plans mean that some insured individuals will experience a financial barrier which denies them access to appropriate and needed products; however, that number should be very limited. Insurance plans vary according to the depth of coverage (the limitation of the financial responsibility the insurer is willing to take and the copayment level required of the insured individual), and the breadth of coverage (the type of product covered by the plan).

A study for the Inquiry conducted by Dr. J. Hurley "An examination of access to prescription drugs in Ontario and an evaluation of selected cost-sharing policies" (see appendices, volume II) examines the range of private insurance coverage for drugs, discusses the adequacy of benefit coverage, and tries to determine the level of population in Ontario which is inadequately served.

Unfortunately the results were estimates rather than concrete numbers; "...to truly measure access requires comparing the distribution of drug needs with the distribution of resources (including third party coverage) to identify segments of the population for which needs exceed resources. The data required for this task, however, are not available."[42] Nonetheless this report will rely heavily on that research, as it is the best available data.

In view of the inability to determine exact access, the best guess usually makes a determination of the proportion of the population which has some form of private insurance. Most people with private coverage have obtained it as an employment benefit, Green Shield has stated that less than 1 per cent of its coverage is for policies bought by individuals.

There are two ways in which a private insurer can control the level of risk that it is exposed to: by controlling the breadth of coverage or by controlling the depth of coverage. Controlling the breadth of coverage will affect the acquisition of specific types of products by the

41 Rucker, T. Donald, "Superior Hospital Formularies: A Critical Analysis", *Hospital Pharmacy*, 17, 1982, p.465.
42 Hurley, Jeremiah, "An Examination of access to prescription drugs in Ontario and an evaluation of selected cost-sharing policies" (see appendices.)

people who are insured; controlling the depth of coverage will affect utilization in general. Probably neither will have any appreciable effect on drug prices.

The discussion of depth of coverage is found in the section of chapter 9 dealing with the consumer and access to drug benefit coverage.

Breadth of coverage differs very little between plan types. The two largest of Ontario's private insurers, Blue Cross and Green Shield, have more than one type of plan, but their most "limited" plan covers all basic prescription drugs, while the more "generous" plans will cover special drugs or disease categories, as well as many over-the-counter medications.

Depth of coverage is extremely variable among different plans. Each insured (group or employer) negotiates the benefit levels—in terms of coinsurance, copayments, total annual coverage limits and total lifetime coverage limits—separately with the insurance company.

Because of the record-keeping methods of the insurance companies, only average insurance data is available. For 1988, Blue Cross shows the average cost per prescription to be $23.13 (as opposed to the average ODB cost of $18.37). Of this, the covered individuals paid an average of $1.59, or 7 per cent. The average subscriber paid a total of $18.91 per year for drugs, which translates to about 11.9 prescriptions per year. In contrast, the ODB average number of prescriptions per year is 23.6.

However, because of a variety of factors, including ingnorance of coverage, a number of individuals with private insurance plans will fail to utilize their coverage. In comparison, the utilization rate under the ODB plan has been extremely high. This rate of utilization, as well as the generally higher level of medication usage of the ODB as a group, explains most of the difference in the numbers of prescriptions per year. But the copayment and limitation of coverage provisions undoubtedly account for some of the difference.

The insurance companies will pass on the risk of increasing annual prescription costs in the premiums charged to the individuals and groups they cover. Actually, the risk of increasing costs is a fairly small element of the drug insurance business, at least for one company: "The revenues of Green Shield are derived approximately 17 per cent from rated or premium groups and about 83 per cent from 'administrative services only' (ASO) groups. A rated group is one which pays monthly rates to Green Shield, based upon single or family coverage, with Green Shield undertaking the risk and establishing reserves for incurred but unreported claims (IBNR). Under the ASO system, Green Shield pays the monthly approved and submitted claims of pharmacists, and invoices the group for the amount of claims paid, plus an administration fee. The group accepts the risk and liability of IBNR claims. (Parenthetically, it might be observed that ASO arrangements are now common in Ontario with large employer groups)."[43]

The result is that the majority of the changes in the average cost of drugs, the cost of pharmacist fees, or the average number of prescriptions per individual, passes on quickly to the employer. The employer then realizes a change in the cost to produce the goods or services sold. The smaller number of rated groups will be slower to feel the impact of changes, but the changes are passed on in the form of premium changes. One of the issues

43 Brief by Green Shield Prepaid Services Inc., #105-3200, p.4.

of concern expressed in the brief by Green Shield is the effect of, and concern with, the increase in prescription costs, and in particular that element of the increase contributed by increasing average drug costs.

"By way of example, one of the significant areas of union negotiations in the automotive industry in the bargaining years 1982, 1984, and 1987 revolved around the issue of control of drug costs, and the selection of the approved level of drug services to be provided. For the employees this was a highly significant issue since it meant that drugs not covered in the approved benefit schedule would be borne solely out of their own pockets...Thus a needed drug, for which no third party coverage is provided, has a direct impact upon the employee measured either by the actual cost coming out of the employee's pocket, or by the employee receiving a less than adequate drug for the sickness involved because the employee cannot afford the high cost of the properly needed drug... In a like manner, the continually increasing drug costs are a cause of great concern to employers. Thus attempts to limit the effect of these increases, either by imposing a portion of the cost upon the employees, or by changing the level of services, becomes a serious matter. (Simply as a matter of example, one employer, in negotiations in 1982, proposed to change the level of benefits provided to its employees by establishing a generic plan, and in making that proposal, anticipated savings of some $750,000 annually. Extrapolating that amount into the whole Canadian scene indicates the magnitude and the potential for reduction or restraint of costs available to all Canadians)."[44]

The concern over cost containment has resulted in the promotion of various cost savings measures by Green Shield, the only private insurer to make a submission to the Inquiry. "We perceive a growing economic thrust in promoting product selection because it is clear, in our view, the use of interchangeable drugs, can reduce, or at least restrain the upward rise in drug costs."[45] The analysis done by the company for 1986, when an estimated $1.2 billion in third-party (including ODB) claims were paid, indicates that the estimated savings resulting from product selection were $94.2 million. Because only limited product selection was available, the actual saving was roughly half that.

"It is clear that product selection is a very important element of cost containment. However product selection is unlikely to occur unless there is a mandate which requires the application of product selection... There is much pressure in the marketplace by the pharmaceutical brand name manufacturers against product selection. Since product selection is obviously useful in reducing or restraining costs, we expect that, in the future, more and more plans will be designed to bring about product selection."[46]

[44] Ibid., #103-3200 p.7-8.
[45] Ibid., #103-3200 p.16.
[46] Ibid., #103-3200 p.19.

Chapter VI
Distribution of Drugs

The distribution of drugs, particularly the role of the wholesaler in a changing marketplace, is examined by the Committee in light of its concern to make drugs universally and economically available. The chapter also examines and makes recommendations with regard to Ontario Government Pharmaceutical and Medical Supply Services and the hospital unit dose system.

6.1 Role of Wholesale Drug Distributors

The major part of sections 6.1.1, 6.1.2 and 6.1.3 appeared first in the Third Quarterly Report of the Inquiry.

6.1.1. Overview

The wholesale drug distribution system in Ontario is reported to be facing pressing and complex problems. There are conflicting explanations of these difficulties, (primarily a decreasing market share) and, of course, conflicting suggested solutions for their resolution.

We therefore propose to outline briefly our understanding of the current situation and the underlying causes. We will state some basic principles we feel must be protected, identify alternative solutions, discuss briefly our concept of the implications of each of these and finally make recommendations.

6.1.2 Current Situation

The wholesale distribution of drugs in Ontario is performed by the segment of the industry which ensures that drug products are delivered safely and efficiently from the manufacturer to their destination: the hospital or retail pharmacy. Some manufacturers choose to do this directly; others hire another company to act as agent to deliver drugs for them; yet others choose indirect distribution, selling their products to a company which is in the business of wholesale delivery.

Ontario has three major companies that distribute drug products to retail pharmacies and hospitals. One is a pharmacist-owned cooperative; another acts purely as manufacturers' agent; the third is a subsidiary of a large national conglomerate.

The wholesale distribution of drugs is not as simple as the distribution of most other products: great care must be taken with record-keeping in order that products can be quickly accounted for or traced if a recall occurs and drugs must be safeguarded from theft, diversion and damage. There is a wide range of products, some of which are very costly. To a certain extent, hospital pharmacists can plan and budget closely for prescription medication supplies because the hospital environment deals with a limited formulary and a limited number of prescribers. This is in direct contrast to the community or retail setting, where the sale of prescription medications depends entirely on a demand created by an order from a prescriber. In the interests of patient

treatment, a prompt and efficient delivery system is required. Thus, community pharmacists depend on the wholesaler to enable them to stock or have quick access to a wide variety of products. The wholesaler's ability to respond quickly also allows the pharmacist to take advantage of lower inventory levels.

Historically, wholesalers taking advantage of volume purchasing have warehoused products and then sold them to the retailer. Three factors have affected the relationship between retail pharmacies and wholesalers in recent years. The first has been the advent of large chain and franchise pharmacy operations which has resulted in direct group buying from the manufacturer, by-passing the wholesaler. The second has been the increasing generic competition for pharmaceutical medications. More manufacturers now sell products for which there is more than one brand, which creates a strong incentive to monitor and influence the pharmacist who is making purchasing decisions. Previously, it was only the prescriber (usually the physician) who needed to be influenced.

The third factor has been the 1986 introduction of the concept of best available price (BAP). There is a legislative upcharge[1] (currently set by regulation at 10 per cent) which the pharmacist receives; this is provided whether or not the product is purchased directly from the manufacturer or his agent, or indirectly from a wholesaler. The current legislation[2] does not permit the addition of a wholesaler charge to BAP, and when purchases are made from the wholesaler, the pharmacist does not directly recover the wholesalers' charges. This results in a relative reward for the pharmacists who purchase directly from the manufacturer.

As a result of a combination of these three factors, there is said, in recent years, to have been a shift in the distribution of drugs from indirect to direct; this has resulted in a decrease in the market share held by wholesale distributors. Published data have indicated a major one-year shift in the percentage of manufacturers relying mainly on wholesale distribution to those which conduct mainly direct distribution.[3]

It is important to note that almost all manufacturers of drug products use a mixture of delivery methods; manufacturers who have their own or an agency distribution system also have some products shipped through wholesalers; manufacturers who use wholesalers for the majority of their deliveries will still make some larger shipments directly.

The result of this shift, however, is that the indirect wholesale distribution companies have been losing market share; several have expressed concern about the very viability of their industry in Ontario. However, despite the reported reduction in market share, it would seem that the volume of sales has continued to rise.

6.1.3 Principles

Before considering possible solutions to the problems of the wholesale distribution system, it seems worthwhile to consider some principles which, in the view of the Committee, must be protected.

1. **Prescribed drugs must be made available within a reasonable time** to all patients who need them, irrespective of their geographic location within Ontario. An effective wholesale distribution system would seem to be required to ensure this,

[1] Ontario Drug Benefit Act, R.S.O. 1986, C.27.s. 18(4).
[2] Ibid., s. 18(2).
[3] Between January 1987 and January 1988 there is said to have been a decrease of just over 11% in the market share held by wholesale distributors (from 56.8% to 45.1%). This data was presented to the Inquiry at its public hearings.

in that it is not possible for all pharmacies to stock all approved drug products, nor can all manufacturers assure prompt availability of all products. Further, some manufacturers tend to provide direct distribution only to pharmacies and hospitals in or close to urban areas, relying on wholesale distributors to service the more remote areas of the province.

2. **Whether it is direct or indirect, the manner of distribution of drug products should be revenue-neutral to pharmacists and should be determined by such factors as effectiveness and efficiency of distribution.** Pharmacists should not be motivated by financial incentives in choosing to obtain drug products either from the manufacturer or through a distributor.

3. **The final recommendation should not require additional public funds.** Tax dollars are already in place to support the distribution of drug products in Ontario. Manufacturers who choose to make direct distribution available have included the distribution costs in the BAP to pharmacists. Since 1986 pharmacists have received a 10 per cent add-on to the BAP to compensate for wholesale distribution costs that they incur.

4. **The recommendation to be made should not result in windfall "distribution profits" for drug manufacturers whose profits properly derive from the sale of the products.** As already indicated, manufacturers who have chosen to distribute products directly to pharmacists have built the costs into the BAP.

   No additional financial benefits should flow to a manufacturer who makes a decision to distribute directly. A decision by a manufacturer to switch from wholesale to direct distribution (for example, for marketing or promotional purposes) should not be subsidized by the Ontario Drug Benefits (ODB) program.

5. **Distribution costs should be paid to those who incur them.** They should not be used as a "back door" supplementary payment for other services.

6.1.4 Proposed Solutions

Several solutions were proposed and some of those presented for public discussion and response. Options one and two were proposed by the Canadian Wholesale Drug Association; option three was proposed by Green Shield Prepaid Services Inc.; options four and five were independently produced.

1. Revert to the mechanism in place prior to the enactment of the Ontario Drug Benefit Act and the Prescription Drug Cost Regulation Act in December, 1986. This would involve allowing "wholesale oriented manufacturers" (for which a definition was established), to quote the price that they would charge to wholesalers. The Ministry of Health (MOH) would then list a BAP which would include a percentage mark-up to cover the wholesale distribution cost. The pharmacist would be reimbursed at this higher BAP.

   This proposal does not involve an adjustment to the 10 per cent currently added to BAP by regulation pursuant to Section 7(3)(b) of the Prescription Drug Cost Regulation Act. However, it would require the infusion of additional public funds.

2. Encourage agency agreements instead of indirect distribution. A manufacturer who now distributes indirectly through a wholesaler sells at BAP to the wholesaler who, in turn, sells the product to the pharmacy at BAP plus the distribution charge. In agency agreements, the manufacturer turns over the product to the agent distributor who sells it to the pharmacy at BAP. The agent distributor receives from the manufacturer a percentage of BAP to cover the distribution charge. In this case,

the pharmacist does not have to pay any additional distribution charge because it is incorporated in the BAP.

This proposal also does not involve an adjustment to the percentage added to BAP by regulation made pursuant to Section 7(3)(b) of the Prescription Drug Cost Regulation Act. However, it too would require the infusion of additional public funds because the BAP for drugs delivered by an agent distributor would be higher.

3. Make an adjustment to the percentage added to BAP that would compensate the wholesale distributor. In this proposal, a base of 6 per cent would be added to BAP for direct purchases from manufacturers of drugs and 14 per cent (6 per cent plus 8 per cent wholesale charge) for products purchased from the wholesaler. The result of this would be that the pharmacist would charge and receive BAP plus 6 per cent for drugs purchased directly from manufacturers. If drugs are purchased from a wholesaler, the pharmacist would charge BAP plus 14 per cent and receive a net of BAP plus 6 per cent (14 per cent–8 per cent wholesale charge). If purchasing continues to be divided approximately evenly (as at present) between wholesale and direct distribution the overall cost to the public would remain at BAP plus 10 per cent.

   This proposal does involve a change to the percentage added to BAP by regulation made pursuant to Section 7(3)(b) of the Prescription Drug Cost Regulation Act of Ontario. It should not require more public funds.

4. Vary the reimbursement to the party delivering the product, depending on whether the product is single-source or multi-source.[1] A manufacturer who delivers a single-source product directly to the pharmacy would get no additional reimbursement. A manufacturer who delivers a multi-source product directly would be reimbursed at cost plus 5 per cent for that delivery. A wholesaler who delivers a single-source product would be reimbursed at 5 per cent over cost, and a wholesaler who delivers a multi-source product would be reimbursed at plus 10 per cent. This proposal would require redefining BAP as a price for the drug alone, not including distribution costs. Every BAP would have to be rolled back by 5 per cent, across-the-board, once.

   This proposal does not involve an adjustment to the percentage added to BAP by regulation made pursuant to Section 7(3)(b) of the Prescription Drug Cost Regulation Act. The wholesalers would receive an overall average of about 8 per cent more for drugs distributed indirectly.

5. Recommend that no action be taken by the government, allowing the parties concerned to find their own solution under the influence of market forces.

The Inquiry was not satisfied with any of these proposals, and requested responses from interested parties on the principles and alternative proposals presented in the third quarterly report. A day of open hearings was held on the issues.

6.1.3 Issues and Recommendations

Subsequent to the forum, the principal issues and their impact on distribution were clarified. They are as follows:

[1] Because of marketplace competition, multi-source products usually sell at a price considerably lower than single-source products.

1. The 10 per cent upcharge. There is no agreement as to the original intent of this charge. Individual pharmacists and the Ontario Pharmacists' Association (OPA) have taken a stance that it is for inventory costs; the MOH and others believe it was designed to cover distribution costs, yet others have regarded it as an administrative allowance. The Canadian Wholesale Drug Manufacturers Association (CWDMA) has stated in its submission to the Inquiry that: "The 10 per cent pharmacy purchasing advantage negotiated by the OPA and provided in the new legislation has nothing to do with the traditional distribution cost allowance (10 per cent). The former is applicable at the retail level for whatever purpose the Ministry had in mind. The latter was previously allowed by the Ministry as an addition to the base price in the formulary, which, in effect, is the price of the product at point of use. Today the pharmacist takes the 10 per cent purchasing advantage as being totally his.

"The Ontario government has agreed to pay the cost of distribution for products sold direct because this cost is already built into the direct manufacturer's [i.e. the manufacturer that sells directly to the retailer] price. However, our Ministry of Health, does not recognize this same charge if delivery of the goods is handled by a wholesaler/distributor."[5]

Edwin Chow of The Village Pharmacy suggested in his submission: "The answer is to provide for a pricing differential between differing sourced products. Since other recommendations in the final report from the Commission may suggest changes to the legislation, it would not be unrealistic to also make changes to correct the definition of BAP to reflect the cost to the dispensing pharmacist and basing BAP on the most common (75 per cent) source of procurement by dispensers, as based on manufacturer's records. ...I must disagree in the strongest terms with the statement in principle three regarding the 10 per cent add-on to BAP being for the purpose of compensating for wholesale distribution costs. As previously stated, the add-on is to compensate for higher costs associated with purchase of less than maximum sized containers of product, on which the BAP is usually based."

The first-order effects of the upcharge are clear: There are definite financial incentives for the pharmacist to purchase direct and to have the manufacturer absorb distribution costs. As a result, there has been a marked shift to direct distribution and the market share and profit margins of wholesalers have declined. Drug Trading also stresses that it provides low minimum values for single orders to retail pharmacists. Under the current system, the company charges an 8 per cent wholesale charge to its customers on the invoice. This 8 per cent now becomes a cost which the pharmacist/retailer must try to recoup as it is no longer reimbursable by the government. Drug Trading feels that pharmacists are supportive of the wholesalers' dilemma on the one hand but are also encouraging smaller manufacturers to sell more products directly.[6]

Livingston Pharmaceutical Distribution Ltd. assumed the concept of BAP would remain. Current BAP regulations recognize the reality of distribution. It does not cost the system more to purchase through a wholesaler than to purchase direct. Each level of the distribution chain (change in ownership) adds a cost and a value. The value the wholesaler adds is convenience plus reduced store inventory but at a cost of between 5 and 7 per cent. Livingston suggested that the current 10 per cent add on to BAP be reduced to 7 per cent and noted that manufacturers must be allowed to choose the direct distribution

[5] Brief from CWDMA, #2-5100 pp. 4-5.
[6] Brief by Drug Trading, #31-5200.

channel. This includes adjustment to BAP if the net cost to the dispensing point is less than the current wholesale selling price. A manufacturer chooses to go direct in order to have a shorter distribution chain. The direct channel offers a closer relationship with the dispenser, control of product, price and packaging to the dispenser, and improved product recall capability. Some companies feel that being direct helps meet compulsory licensing and generic competition. The proposed solution was that product reimbursement should be actual acquisition cost (AAC) defined as BAP plus distribution costs up to a maximum of 8 per cent of BAP. Distribution costs could be wholesaler add-on, or 'minimums', or other extras incurred in buying direct.[7]

The CWDMA recommends reinstatement of the previous system and ensuring that the cost of distribution is reimbursed to the pharmacist regardless of the direct or indirect orientation of distribution by the manufacturer, or, alternatively, that distribution agreements between drug wholesalers/distributors and their clients be legitimized. This would necessitate a one-time uncapping of the price increase or BAP concept.[8]

Several companies, including Rhone-Poulenc,[9] Glaxo,[10] Astra Pharma Inc.,[11] Eli Lilly,[12] Ayerst,[13] Boehringer Ingleheim,[14] Pfizer Canada Inc.,[15] and the Pharmaceutical Manufacturers Association of Canada[16] want drug reimbursement based on AAC to the pharmacist plus an up-charge and a dispensing fee. It, of course, is concerned with the encouragement of the use of generic (cheaper) products, which threaten research-oriented manufacturers. PMAC feels that the legislation has created a pricing system which is open to abuse, without guaranteeing elimination of price spread. The manufacturers believe that AAC is the only effective method of completely eliminating price spreading and avoiding discriminatory disruption to market competition at the retail, wholesale and manufacturer levels.

However, the Inquiry feels that the second-order effects are now becoming evident. Pharmacists' costs of ordering are escalating as they buy from multiple sellers; inventory costs are up because of the increased minimum amounts that must be purchased; wastage due to outdated stock is up; returns are more difficult; and accounting costs have increased. Pharmacists also complain about the manufacturers' drug detailers who check stock and apply pressure to place orders for specific drugs.

In theory, as the cost and inconvenience of direct buying mount, pharmacists should reverse the recent trend and direct orders back to the wholesalers. This is not happening, presumably because of the enticement of the short term 10 per cent "bonus" of direct purchasing. Pharmacists have come to regard the dispensing fee and the 10 per cent as the two recognized sources of income from the ODB program. It is the stance of the profession that the negotiated ODB dispensing fees have not kept pace with operating costs, and it is only the 10 per cent upcharge (combined with increased dispensing fees charged to cash customers and third party insurers) that has enabled them to maintain earnings.

7 Brief by Livingstone Pharmaceuticals, #164-3,200.
8 Op. cit., CWDMA, brief and presentation in September, 1988.
9 Brief #24-3,200.
10 Brief #42-3,200.
11 Brief #80-3,200.
12 Brief #111-3,200.
13 Brief #67-3,200.
14 Brief #113-3,200.
15 Brief #146-3,200.
16 Brief #114-3100.

2. Wholesalers. At present, all wholesalers in the province must register with the Ontario College of Pharmacists; 40 have done so, and only two of these offer a full range of services. The remainder are limited in terms of both area served and products inventoried, and range down to small wholesalers owned by pharmacists and others with a restricted trading field.

The registration serves as part of a drug control system, permitting notification of wholesalers in the event, for example, of changes in legislation which affect to whom they may sell their products.

Further, all wholesalers and pharmaceutical manufacturers who sell narcotics and other controlled drugs to pharmacists, physicians, hospitals and others eligible to purchase them must register with the federal Bureau of Dangerous Drugs as "licensed dealers."

Wholesalers purchase products from manufacturers, maintain and warehouse inventories, take orders, ship to retailers and maintain accounts receivable. At present, beyond the requirement to register, there are no government regulations regarding their licensure or control. The Inquiry believes that the MOH, the OCP, the CWDMA and the Ontario Hospital Association (OHA) should jointly establish definitions of wholesalers, and the Ministry should establish guidelines which provide certain minimum standards.

Standards required of wholesalers should extend beyond the simple need to register to include a system of regulations or guidelines dealing with maintenance, operation, staffing and service policies. Since this Inquiry is primarily interested in those elements of service that result in the public receiving medication as quickly as possible, we believe that availability of all prescribed products and fast, province-wide distribution should be addressed with priority.

6.1 The Committee therefore recommends that minimum standards be established for services provided by wholesalers, in order for their charges to qualify for reimbursement as set forth below in recommendation 6.2. These standards should include availability and fast, province-wide distribution of most prescribed products.

3. Direct selling. This has become part of the marketing strategy of those manufacturers who attempt to enhance market share through direct contact with pharmacists, by monitoring their drug inventories and taking and influencing orders. While there is every reason to believe the practice will continue to grow in urban areas because of the upcharge incentive, this may not be true of small, rural pharmacies which find it difficult to meet some companies' minimum order requirements and to obtain timely delivery. Agency distribution agreements and drop shipments (described below) should generally improve delivery.

4. Distribution agreement. A distribution agreement is an arrangement where the drug manufacturer engages a third party to deliver products to the retailer. The third party agent does not take ownership of the product and may or may not warehouse it and maintain accounts receivable. The agent's remuneration for this service can be either a percentage of the sale price of the product, or a fee paid to the agent by the manufacturer. In either case, BAP has been set to include this agency remuneration.

The MOH questioned the legality of new distribution agreements between manufacturers and wholesalers (which would involve a price increase which would include an amount for agent remuneration) on the basis that these constitute tacit recognition that the price paid by pharmacists includes distribution costs and does not represent the true BAP envisioned by the Prescription Drug Cost Regulation Act.

The wholesalers disagree with this position, but have not entered into distribution agreements.

5. Drop shipment. In a drop shipment, the manufacturer ships directly to the pharmacist and pays the wholesaler a fee— usually 2 to 4 per cent of the sale— for billing and collecting payment. Drop shipment agreements do appear to challenge the concept of BAP. The fee is absorbed by the manufacturer and the pharmacist pays BAP without any additional charges for shipping or accounting.

Various proposed solutions to the wholesale distribution problem, which were set forth in the previous interim report and discussed at a subsequent open forum, have now been rejected by the Committee as being unworkable or inappropriate.

Taking into consideration all the views made known to us, the Inquiry has arrived at a set of recommendations which we believe will protect the public interest in the drug distribution process.

6.2 The Committee therefore recommends that, immediately upon consideration of these recommendations, the Ministry of Health permit wholesalers to enter into agency distribution agreements with manufacturers.

6.3 The Committee further recommends that, to coincide with the effective date of the current renegotiation of the pharmacists' fee, the Ministry of Health take appropriate steps to reduce the percentage added to the best available price to a level designed to compensate for the actual amount the pharmacist must pay to the wholesaler, and to eliminate entirely the upcharge added to BAP for direct sales.

This recommendation would make the decision regarding the mode of delivery revenue neutral to the pharmacist and would help create a "level playing field" for wholesale distributors. Since the surcharge would no longer be a significant source of revenue for the pharmacist, the professional dispensing fee would have to be adjusted accordingly (see recommendation 6.5.)

Overall, this proposal should not result in a net decrease in costs to the ODB, because the savings realized by the decreased upcharge payable for distribution should be added to the dispensing fee to fairly compensate pharmacists for their professional activities.

A decision to promote direct sales, as well as to switch from indirect to direct sales, can be viewed as part of the marketing strategy of a firm. Therefore any associated increase in distribution costs should be paid by the drug manufacturer, and not result in an increase in the listed BAP.

6.4 The Committee therefore recommends that the Ministry of Health take appropriate steps to ensure that no increase in the best available price is allowed when a drug manufacturer moves from indirect to direct sales.

Negotiations regarding the dispensing fee should take into consideration both the recommendations in this report, which will result in an appropriately expanded professional role for pharmacists, as well as changes in the surcharge proposed in recommendation 6.3.

6.5 The Committee therefore recommends that, as part of the current dispensing fee negotiation, the Ministry of Health renegotiate the fee structure by which pharmacists are reimbursed to reflect the reduced upcharge and the expanded professional role for pharmacists.

6.2. Ontario Government Pharmacy and Medical Supply Services

Ontario Government Pharmacy and Medical Supply Services (OGPMSS), or Government Pharmacy, grew out of a recommendation, in 1960, by the Select Committee of the Ontario Legislature on the Cost of Drugs, to implement a program of central buying and testing of drugs. This committee believed that a centralized pharmacy warehouse would result in a smoother flow of drugs to the testing lab and that centralized buying and warehousing would reduce costs to, and waste by, the hospitals concerned.

Government Pharmacy was established in 1969 when the MOH was appointed the "sole agency for the purchase and supply of drugs, pharmaceuticals and biologicals for human use for the government of Ontario."[17] The stated purpose of the program is to "...procure, warehouse and distribute, in the most economical and efficient manner, drug, pharmaceutical, biological, medical and laboratory supplies for use in Ontario government agencies and facilities, and in public health programs across the province."[18]

At this time, the Government Pharmacy acquires products for all MOH psychiatric hospitals, including mental retardation centres, provincial labs, jails and correctional centres. On request it will also act for homes for the aged, public hospitals, nursing homes and other agencies. Currently the major psychiatric hospitals have their own clinical pharmacists, but many of the other institutions and agencies have only nursing staff who rely on the Government Pharmacy for these services.

The Inquiry heard both criticism and praise with respect to the services provided by Government Pharmacy. Long-term care facilities in particular expressed a relative degree of satisfaction, but most submissions to the Inquiry were distinctly critical.[19] The Committee has carefully examined the positive and negative comments made during the public hearings, and in written submissions. We also considered the rationale for a centralized pharmacy run by the provincial government, examined both the development of this program over the past 20 years and alternatives. The following is a brief summary and evaluation of the information obtained by the Committee.

The services provided by Government Pharmacy can be evaluated in terms of the five principles set out above for solutions to the wholesale distribution issue. The Inquiry has learned that while Government Pharmacy

[17] Government of Ontario, Order-in-Council, April, 1969.

[18] Ontario Ministry of Health, Government Pharmacy and Medical Stores Manual of Corporate Policy and Procedure #3-675, May 1980.

[19] Among the comments are the following: The Canadian Society of Hospital Pharmacists (Ontario Branch) discusses problems occurring with the system including slow turn-around time, back-orders, and short-dated stock, resulting in excessive returns or wastage. The OB CSHP recommends that provincially-operated hospitals and long-term care facilities could benefit and accrue significant savings if they were permitted to purchase drugs directly from the manufacturers or participate in group purchasing programs.

The Association of Chief Pharmacists of Ontario Psychiatric Hospitals states that there has been a long history of service level problems; the normal delivery time is four to six weeks. The quality control of the service is also very low; there have been shipments where the expiry date of the product is imminent, poor packaging, and high delivery costs. The documentation also shows that product costs are higher on average than if the product had been purchased through the Hospital Purchasing Program of the OHA. It has been estimated that in 1985-84 savings of $150,000 would have resulted from just these product costs alone. (It should be noted that some of this saving would have to be spent in OHA fees.)

The Ontario Pharmacists' Association says that public, as opposed to provincially-run, hospitals rarely use Government Pharmacy, even though they have the option of doing so. This is because brands of medications are often distributed to long-term care facilities from Central Pharmacy, and there is wastage of these drugs, because some of them are outdated before they can be used. "Moreover, different formulations are provided from time to time creating confusion among the facility's staff, pharmacists and residents." Finally, the service levels are poor, and brands of drugs which have not been designated as interchangeable are provided.

The OHA says that Government Pharmacy causes major difficulties to OHA members and to provincially-owned psychiatric hospitals and long-term care facilities which are required to purchase all their pharmaceuticals from the Central Pharmacy. The problems with Government Pharmacy include slow turnaround time, back orders lasting seven to 10 weeks and short-dated stock. "OHA believes that significant savings would accrue if these hospitals were allowed to purchase directly, or participate in the independent purchasing programs described above."

Finally, the Ontario Nursing Home Association says that Central Pharmacy requires a different ordering and administration system from formulary medications. Unlike local pharmacies, it also does not supply medications in individually prepared packages. It is inefficient: turn-around for orders is between three weeks and three months, and back orders are slow. Substituted products are often supplied for the physician's originally prescribed product as well.

makes prescribed drugs available to all clients in Ontario, this does not happen within a "reasonable time." For example, pharmacists in psychiatric hospitals served by Government Pharmacy have had considerable difficulty with unpredictable delivery dates and the receipt of drugs unacceptably close to expiry date. Such problems have been less severe for nursing homes and homes for the aged.

The manner of drug distribution, where products are supplied in bulk to the client, is tailored more for psychiatric hospitals and other agencies which employ pharmacists, than for institutions which rely on community pharmacists. Pharmacists who provide services for nursing homes and homes for the aged on a contractual basis are expected to provide value-added counselling services for the over-the-counter products purchased from Government Pharmacy, along with the prescription drugs that they sell and dispense. Community pharmacists provide their clients with complete patient medication records, and drug interaction evaluation based on those records, and must include those products that are prescribed to the patient and obtained from Government Pharmacy, even though the counselling services they provide for drugs they don't sell are costs they have to absorb. Furthermore, the nursing staff in those facilities are expected to dispense the bulk medication in individual doses, while the products they obtain from community pharmacists are usually packaged in unit doses for ease of distribution.

Some Government Pharmacy clients report that it takes two to three weeks for orders to be processed and delivered. This would be acceptable performance were it not for associated complaints: items back-ordered and not sent; time for delivery ranging from one to four weeks, complicated inventory and purchasing control; products received which are unacceptably close to expiry date; delivery charges by third-party carriers, particularly to remote areas; switches in drug products, package sizes and formats arising from changes in suppliers; and difficulties in returning excess, expired or faulty products for credit.

Such problems appear to be greater for the provincial psychiatric hospitals, which at present must rely on Government Pharmacy for all services, than for homes for the aged and nursing homes, which are required to purchase only over-the-counter products from Government Pharmacy and may purchase prescription drugs from community pharmacists.

The service does not appear to be sensitive to customer complaints and clients report that their concerns are largely ignored. Although a user committee was struck during 1980 to provide a forum to discuss Government Pharmacy service problems, it has not met since 1987. The Inquiry has been told that future meetings are planned.

In addition, the current information management system of OGPMSS is not set up to track performance information such as back orders, shipment times, delivery costs and product expiry dates, although the capability to do so exists.

Beyond the stated purpose of Government Pharmacy to procure, warehouse and distribute, it is also charged with testing and evaluating drug products at the Ministry laboratory. According to the latest catalogue, approximately 130 non-prescription drugs, 311 prescription drugs and 33 vaccines are carried by Government Pharmacy and an additional 734 medical and emergency supplies are listed. OGPMSS is also required to maintain Ontario's provincial holding of the national stockpile of emergency health supplies.

All requisitions received by Government Pharmacy are reviewed by a staff pharmacist for safety and efficacy. This seems to be an unnecessary duplication of effort; if a product

has been passed and tested by the Drug Quality and Therapeutics Committee (DQTC) and has been, or will be, prescribed by an institutional prescriber, the additional examination of the product by a pharmacist seems unnecessary.

The criteria applied to purchases made for persons covered by the ODB formulary are not applied to purchases made for others. Therefore, ODB standards do not apply to patients who are going to receive Government Pharmacy products unless they are ODB recipients. This results in the inequitable application of the standards and safeguards which have been set up and applied by the DQTC. If the ordered product is not found in the formulary, the safeguards and standards otherwise required of products have not (yet) been met, and the product should not be available for persons whose drugs are being paid for by the government of Ontario.

In accordance with the current rules, the provincial psychiatric hospitals pay the cost of their Government Pharmacy supplied drugs and deliveries out of their budgets; the ODB pays directly for those of nursing homes and homes for the aged. Non-prescription drugs on the approved list are issued without charge to nursing homes and homes for the aged, and the costs of these are charged back to the ODB budget.

Drug products listed in the ODB formulary/comparative drug index and supplied to nursing homes, homes for the aged and homes for special care, are not eligible for reimbursement through a community pharmacy without emergency authorization by the MOH. This authorization will generally only occur when products are out of stock at Government Pharmacy or a delivered substitute was rejected by the ordering physician. This leaves a problem for the ordering facilities if, through oversight or lack of foreknowledge, they have failed to order a needed product, or if the Government Pharmacy delivery is too late for their need.

While Government Pharmacy operations are computerized, it is not yet possible to place orders electronically, although this capability is under consideration.

Overall Government Pharmacy sales for 1989/90 are estimated at $38.4 million. Of this total, drug products account for $10 million, vaccines for $22.2 million and supplies and services for the remaining $6.2 million.

The MOH has provided figures to show that Government Pharmacy is able to purchase drug products at favourable prices. It is claimed that wholesale prices at BAP would be considerably (45 per cent) above those of Government Pharmacy, while retail costs would be substantially (223 per cent) higher. However, the Inquiry has concluded that these comparisons are valid only for worst-case scenarios. An MOH analysis of unit price and total purchase price for similar products shows that the total value of products priced through Government Pharmacy is 96 per cent of the cost of the same products through Hospital Purchasing Plan (HPP), the purchasing group of Ontario hospitals outside Metro Toronto.

This leads to the conclusion that the Government Pharmacy and HPP prices are approximately equal, making it reasonable for provincial psychiatric hospitals, nursing homes, homes for the aged and other clients of Government Pharmacy to explore other bulk purchasing arrangements. A submission of the OHA also confirms that purchasing through suppliers other than Government Pharmacy need not necessarily result in increased costs.

If over-the-counter drugs were purchased through wholesalers and retail pharmacists, the cost could be greater but would include desirable value added services which should save institutional labour and result in increased quality of care. A recommendation that Government Pharmacy divest itself of the purchase and delivery of pharmaceuticals

should not result in "windfall distribution profits" for pharmacists.

A number of possible solutions to problems with the Government Pharmacy services were proposed in the submissions to the Inquiry.

These included:

- that hospitals (including provincial psychiatric institutions) and long term care facilities be permitted to purchase directly from manufacturers or to participate in purchasing groups;
- that, with the elimination of its warehousing and distribution functions, Government Pharmacy could itself act as a group purchasing program; and
- that provincial psychiatric hospitals and long-term care facilities form and manage individual buying groups.

Combining the comments contained in briefs and submissions with its own research, the Inquiry has concluded that: Government Pharmacy currently offers a limited range of drug products to psychiatric hospitals, homes for the aged, nursing homes and other facilities; there are many justified complaints about the service provided; centralized buying as an effective means to reduce drug costs has been established by other drug purchasing programs, and Government Pharmacy does not provide significantly lower prices; and significant quantities of outdated medication are being disposed of, constituting waste that could be prevented by more efficient distribution techniques.

On the basis of available information, the Inquiry strongly believes that the provincial psychiatric hospitals should be permitted to acquire drug products through existing hospital group purchasing plans.

6.6 The Committee therefore recommends that, by the end of 1992, provincial psychiatric hospitals be allowed to utilize the Ontario Hospital Association's group purchasing plan.

In addition, the Ministry of Health should encourage long-term care facilities to investigate consolidating their purchasing requirements and establishing their own group buying services. Details of alternative methods for provision of purchasing services could be addressed by a comprehensive audit and review of the purchasing, warehousing and distribution functions of OGPMSS by the MOH.

6.7 The Committee therefore recommends that an outside group of consultants be engaged to conduct a comprehensive management and operational audit of the services provided by Government Pharmacy with the express purpose of:

a) examining the possibility of the Ministry of Health divesting itself of the purchasing, warehousing and distribution of pharmaceutical products being carried on through either Government Pharmacy or the supply and services branch, in order that these functions be handled through private sector services which now exist or may be developed; or

b) examining the possibility of developing a more efficient operation of the existing system; and

c) developing, with the involvement of the organizations themselves, more efficient alternatives to those services currently provided to long-term care facilities; and

d) examining the establishment of an outside board of directors from the private sector to oversee the operation should it be retained in some form.

Since the Inquiry's mandate does not cover review of the provisions of biologicals, it is suggested that the OGPMSS' responsibilities for the provision of emergency supplies and biologicals be reviewed separately.

6.3 Hospital Unit Dose

"Institutional drug use is currently more than a $200 million annual expense or one sixth of the $1.2 billion Ontario prescription drug market. Pharmaceutical supplies account for approximately 3.5 per cent of the average hospital budget. This share may slowly increase as drug costs have been rising approximately 15 per cent a year since 1977."[20]

A survey, conducted by the OHA on behalf of the Inquiry, determined that OHA member hospitals utilized distribution systems according to the following:[21]

	No.	%
Ward stock only	15	8.6
Traditional (nursing)	76	43.7
Traditional (cart)	51	29.3
Traditional & unit dose	32	18.4
Unit dose (oral, IV or both)	32	18.4

In the ward stock system, each hospital ward maintains a stock of most of the drugs required for the patients on that ward. Drug orders are given by the physician and carried out by the nursing staff which will dispense from the drugs stocked on the ward. This involves no pharmacy input at the dispensing level, and the distribution system involves pharmacy only at the levels of ordering and distributing to the wards. Pharmacy checks and balances, and controls over drug interactions and patient profile monitoring, are not easy under this system. A modified version of the ward stock system involves having a pharmacist on the wards to assist with dispensing, drug therapy assessment and drug inventory monitoring.

Traditional dispensing involves greater controls through the involvement of the pharmacy. Medication orders, or prescriptions, are dispensed using a system very similar to that of community pharmacy; the pharmacist reviews the patient medication profile, dispenses small vials of the ordered product to the ward, and checks on required changes. This still involves administration from the vials by the nursing staff.

The more recent methods of hospital distribution systems are the various types of unit dose system. Unit dose pharmacy dispensing involves preparation of the medication order, up until the final form which is a single day's supply of the administrable dose, in the pharmacy. It is only the single day's doses which leave the pharmacy to be administered by the nursing staff. There are both advantages and disadvantages: pharmacy costs for both labour and start-up, as well as capital costs, are higher in the unit dose system. Inventory levels are higher in ward stock and traditional systems. Controls are better in unit dose systems, and there is a resultant saving in nursing time: "...an additional 8 per cent of nursing time becomes available for direct patient care when computerized unit-dose drug distribution systems are introduced."[22] This, of course, is an advantage when there is a shortage of nurses; however, more pharmacy personnel are required and there is also a shortage of this professional resource.

Not all hospitals can benefit from unit dose systems, and the system can be applied to specific areas of the medication dispensing system. For example, it is probably advantageous to install a unit dose intravenous additive system in even small hospitals because of the requirements for specialized

20 OHA brief to the Inquiry #57-5100, p.1 of introduction.
21 Most of the information for this section has been taken from the OHA brief, which discusses, among other topics, the different types of hospital distribution systems.
22 Ibid., p.4.

knowledge and aseptic techniques. Wastage in IV systems are cited as one of the main reasons to institute unit dose: "In particular, IV drug therapy has a potential to result in 15 per cent - 30 per cent waste, which amounts to $100,000 - $200,000 annually even for a smaller facility (200 beds with $1 million in drug usage). The literature describes 6 per cent—8 per cent waste in a pharmacy-based centralized intravenous admixture service."[23] But the high initial costs of setting up a unit dose system, combined with the requirements of trained pharmacy personnel, mean that generalized unit dose systems may not be cost-effective for smaller hospitals.

6.8 The Committee therefore recommends that unit dose/IV admixture programs be identified as the system of choice for institutional drug delivery in hospitals above a certain size.

6.9 The Committee further recommends that by 1991 the Ontario Ministry of Health and the Ontario Hospital Association determine the size and other relevant requirements, and that those hospitals identified receive funding for the conversion to a unit dose system.

23 OHA brief #57B-5100, p.30.

Chapter VII
The Prescribing of Drugs

Despite the general high quality of pharmacotherapy in Ontario, we believe there is considerable potential for improvement. In this chapter we consider the prescribing of drugs, the key role of physicians as prescribers, the education of physicians for this role and, in some detail, ways in which prescribing in Ontario can be improved.

7.1 Role of the Prescriber

The appropriate prescribing of drug products is an essential component of optimal drug therapy as outlined in chapter 2. Proper use of drugs is an integral part of the medical revolution that Ontarians now take for granted. The benefits of drug treatment are obvious, but all medical treatments, however effective, carry risks. Excellent prescribing, leading to optimal drug therapy, maximizes benefit and minimizes risk. The crucial importance of the concepts underlying rational prescribing were stressed in the submissions to the Inquiry from many organizations.[1]

As these quotations demonstrate, the issues are not new:

"First do no harm. It is a good remedy sometimes to use nothing."
HIPPOCRATES, 460-355 B.C.

"All things are poisons and there is nothing that is harmless; the dose alone decides that something is no poison."
PARACELSUS, 1493-1541.

"Poisons in small doses are the best medicines; and useful medicines in too large doses are poisonous." WILLIAM WITHERING, 1789.

"I do not want two diseases—one nature-made, one doctor-made."
NAPOLEON BONAPARTE, 1820.

"But know also, man has an inborn craving for medicine...the desire to take medicine is one feature which distinguishes man, the animal, from his fellow creatures. It is really one of the most serious difficulties with which we have to contend...the doctor's visit is not thought to be complete without a prescription."
WILLIAM OSLER, 1894.

"Patients may recover in spite of drugs or because of them." J.H. GADDUM, 1959.

Since the earliest recorded time, mankind has resorted to chemicals (e.g. poppy heads have been found in Stone Age rubble heaps); the use of medication goes back to the origins of medicine. Through history there have been close links between physicians and "physik" (drugs), between medicine and medicines. The tremendous advances in medical treatment parallel, and are part of, the

[1] College of Family Physicians, OMA, Medical Reform Group, Council of Ontario Faculties of Medicine, Association of Jewish Seniors.

technological revolution in the care of the patient that is integral to modern civilization. It is not surprising that over the years society has developed unreasonable expectations concerning medical treatment to the point where, for example, many people now believe all infections to be curable. Every breakthrough in disease treatment reinforces the false expectation that there is "a pill for every ill."

Cultural expectations vary greatly from community to community, but the issuing of a prescription is expected by many as an essential part of the healing transaction. Because drug therapy aims at changing very complex biological processes, and our knowledge of human biology is less than perfect, adverse drug effects are inevitable. Indeed, even placebos can have side effects. Moreover, drug treatment of symptoms without proper diagnosis can lead to serious diseases remaining unrecognized and therefore untreated.

Physicians play the central role in the medication scenario. In Ontario more than 19,000 of them wrote prescriptions in 1987. Issuing a prescription for a drug product frequently represents the doctor's major therapeutic act. However, this must not obscure the fact that attention, caring personal engagement, and empathy are essential ingredients of the treatment process; the most important "prescription" a doctor—or other concerned professional such as a nurse or pharmacist—can give is often herself or himself. Genuine human involvement is essential to the healing art; it does not conflict with the science, including pharmacotherapy, but supplements it.

In its submission, the Medical Reform Group made the point that: "Prescribing is an essential feature of the work of almost every physician engaged in clinical practice. However, despite the central role that prescribing plays in medical practice there has been no systematic exploration of this topic in Canada."[2] The submission also emphasizes the acute need for additional research of all aspects of prescribing.

While prescribers are educated to first consider the needs of the patient, they also vitally influence the other participants. Without prescriptions, the drug manufacturers' product is not used; the pharmacist has little to do. Positively influencing prescribing behaviour thus becomes essential to the economic well-being of both drug manufacturers and pharmacists. Since the provincial government, or insurance companies on behalf of employers, are now fiscally responsible for part or all of the cost of 85 per cent of the prescriptions dispensed in Ontario, their interest in the cost of prescribing has intensified. Attention to the "cost" component is vital in Ontario; we have already reported that during the past decade the cost of the drug program in Ontario has gone up by 500 per cent (see chapter 3).

Because of the central role of the prescriber, it is necessary to examine the seemingly simple matter of prescription writing in considerable detail, starting with a theoretical discussion and followed by some practical considerations as they apply in Ontario.

Definitions may be dull, but in the context of optimal prescribing a clear understanding of the meaning of the words used is crucial.

A drug has been defined by a World Health Organization scientific group as "any substance or product that is used, or intended to be used, to modify or explore physiological systems or pathological states for the benefit of the recipient."[3]

[2] Brief #40-3300.
[3] World Health Organization, technical report #341:7, 1966.

A drug is a single chemical substance that forms the active ingredient of a drug product which is a particular preparation of one or more drugs. The term drug product can be used interchangeably with medicine or medication. In contemporary society, the word "drug" has sometimes come to mean only a harmful, dangerous, addictive or illicit substance, but this is an abuse of the word. In this report "prescription drug" or "drug" refers to a drug product that is legally made available to a consumer for his or her benefit.

A prescription is defined in the Concise Oxford Dictionary as "physician's direction for composition and use of medicine." The Health Disciplines Act[4] of Ontario, defines a prescription as "A direction from a prescriber directing the dispensing of any drug or mixture of drugs for a designated person or animal."

Prescribers in Ontario are overwhelmingly physicians. Although dentists also prescribe, we have not specifically examined the use of drugs in dentistry. Dentists account for a very small proportion of the drugs dispensed in Ontario—roughly 4 per cent[5]—and we believe our general approach also applies to dental prescribing.

There is much more to treatment than just prescribing. We found it useful to ask the questions:

What can the individual consumer reasonably expect of the prescribing physician in the 1990's? The answer may be summarized as "optimal pharmacotherapy," which implies the very **best available** drug treatment, not necessarily meaning the **most expensive.**

A system of optimal pharmacotherapy will, with much overlap, include: accurate diagnosis; informed consent to treatment (and to the cost thereof); optimal prescribing/ rational pharmacotherapy; patient education; and appropriate follow-up.

What can society as a whole reasonably expect of the prescribing physicians in the 1990's? In addition to meeting the above individual patient expectations, physicians can be expected to: evaluate the effects of drugs prescribed, including adverse drug reporting, post-marketing surveillance, clinical trials, and drug utilization reviews; be aware of cost issues and of the appropriate use of generic products; and be appropriately educated for optimal prescribing; this, of course, includes keeping up to date.

Diagnosis: Rational pharmacotherapy depends upon accurate diagnosis. Quite often a working diagnosis is all that can be achieved when treatment is urgently needed. Patients are examined, tests are taken, and treatment is initiated on the basis of the best available information. Treatment is later modified as new information becomes available.

In general, both patient and society gain when treatment is delayed until a full assessment of the patient is completed. Clearly, in urgent situations, this is not possible. "Absolute certainty in diagnosis is unattainable, no matter how much information we gather, how many observations we make, or how many tests we perform. A diagnosis is a hypothesis about the nature of a patient's illness, one that is derived from observations by the use of inference....Our task is not to attain certainty, but rather to reduce the level of diagnostic uncertainty enough to make optimal therapeutic decisions.

"How should we handle uncertainty? To a large degree, the level of diagnostic certainty needed in decision making is a function of the

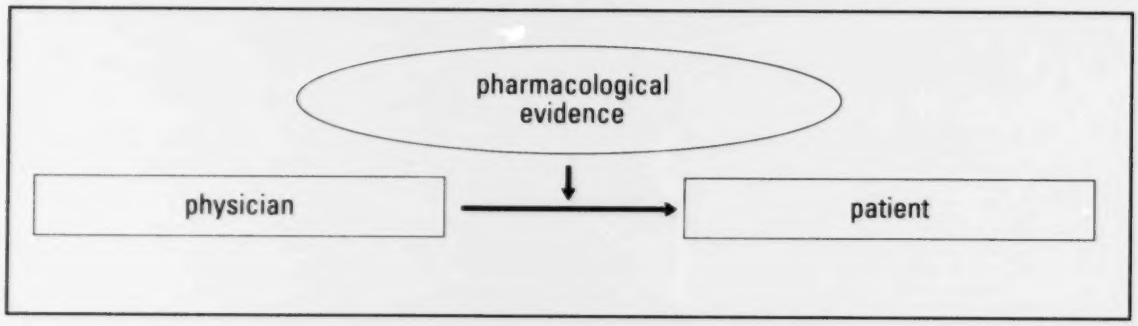
[4] Health Disciplines Act, R.S.O. 1980, Part VI.
[5] Compiled from informal survey data received from the Ontario Dental Association.

characteristics of available therapies. When a specific therapy is high in effectiveness and low in risk, one can tolerate substantial diagnostic uncertainty (and therefore avoid having to carry out many tests)—not only because the treatment cures the disease, but also because it will cause little harm to patients who do not have the disease. By contrast, any therapy that is not highly effective or that produces considerable morbidity must be given only when the level of diagnostic uncertainty is minimal."[6]

A rational and actual information model: Information models which illustrate factors affecting physician's decisions may help in considering the problems faced by prescribers.

S.B. Soumerai of Harvard University uses two models. Figure 7.1 depicts an extremely simplistic and idealistic model of physician behaviour; however many medical schools may not go beyond this rational cognitive model.

Figure 7.1 The Rational Information Model



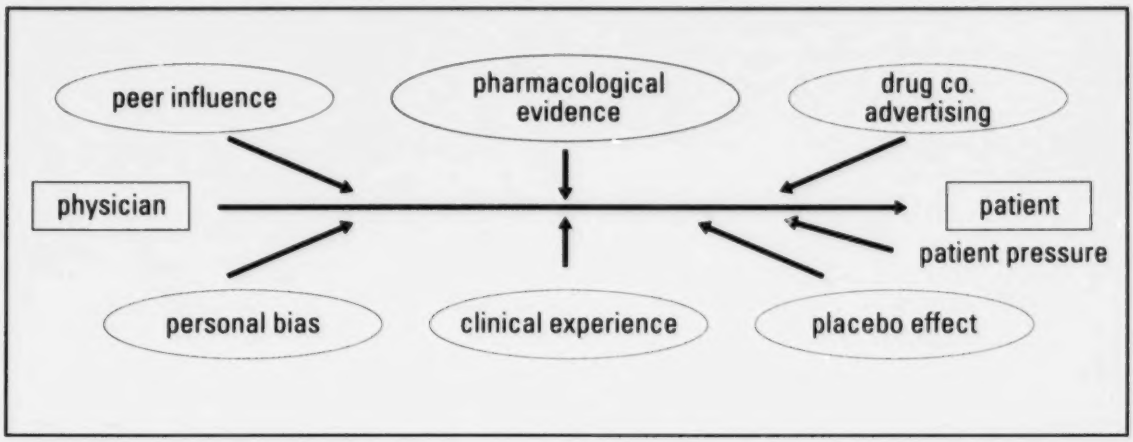
Patients should expect no drug prescriptions, or only minimal short term symptomatic treatment for relatively minor problems, (e.g. insomnia, musculoskeletal aches and pains). Treatment of symptoms without diagnosis can lead to serious diseases—such as depression —remaining unrecognized. Symptomatic treatment should not be considered trivial; on occasion it can also set the ground for tragedy. For instance, an elderly patient may become critically ill following drug induced gastrointestinal bleeding after an anti-inflammatory drug (NSAID) is taken to alleviate joint discomfort and stiffness. The pain and stiffness might have been helped by simple physical methods, or by acetaminophen, rather than a more potent but more dangerous drug. The individual physician's role is to practice rational pharmacotherapy and to prescribe optimally.

Figure 7.2 is closer to the mark yet it is probably also too simplistic. We would suggest including the influence of education concerning drug evaluation. The concept of rational drug therapy is not new, but is much easier to advocate than to achieve.[7]

Rational pharmacotherapy implies that before treating any patients with drugs, physicians should have made up their minds on eight points: 1) Whether any intervention at all is necessary and if so; 2) What alteration in the patient's condition they hope to achieve; 3) That the drug they intend to prescribe is best capable of bringing this about; 4) How they will know when it has been brought about; 5) That they can administer the drug in such a way that the right concentration will be attained in the right place at the right time and for the right duration; 6) What other

[6] Kassirer, Jerome P., "Our Stubborn Quest for Diagnostic Certainty: A Cause of Excessive Testing," *The New England Journal of Medicine*, Vol. 320, No.22 June 1, 1989, p.1489.
[7] Rucker, T.D. & J.A. Visconti, "Relative Drug Safety & Efficacy: Any Help for the Practitioner?" *AM. J. Hosp. Pharm.* 36: pp. 1099-1101, (1979.)

Figure 7.2 The Actual Model



effects the drug may have and whether these may be harmful; 7) How they will decide to stop the drug; and 8) Whether the likelihood of benefit, and its importance, outweighs the likelihood of damage, and its importance, (i.e. to consider benefit versus risk).

It is obvious that drug therapy involves a great deal more than matching the name of the drug to the name of the disease; it requires knowledge, judgement, skill and wisdom, but above all a sense of responsibility.[8]

The necessary skill and wisdom are the products of the prescriber's education, experience and personal innate and acquired capacity. Actual prescribing will fall short of this ideal, but it remains one towards which prescribers should aspire. The treatment strategy must be one which, on balance, bears a reasonable cost.

Cost implications of rational pharmacotherapy: As we have seen, a system of rational pharmacotherapy obtains for the patient the maximum benefit for the least possible risk. Rational pharmacotherapy does not, in theory, necessarily consider cost.

However, in practical terms, unless a treatment is affordable by either the patient or his agent (insurer or the state) compliance will be low. At the same time, it does not follow that the most expensive line of treatment is necessarily the best, even if the cost aspect is disregarded in defining "best."

Generally, parsimonious prescribing is good prescribing. Rational pharmacotherapy reduces the potential for adverse drug reactions and interactions to the irreducible minimum. Rational pharmacotherapy is one aspect of optimal therapy and is an essential ingredient in reaching this goal. Unfortunately, rational prescribing cannot be defined universally, or simply, because what is "rational" is determined by many factors. There are considerable differences in what is reasonable to the patient, physician, insurer, politician, or administrator. As already suggested, rational prescribing can be pointless if patient compliance is not high. Patient compliance is affected by health beliefs and behaviours, disease and drug costs, and the attitudes of those caring for the patient. The prescriber must be sensitive to all these issues.

[8] Slightly modified from *Clinical Pharmacology*, by D.R. Laurence & P.N. Bennett (eds.), Sixth Edition, published by Churchill Livingstone, 1987.

7.1 The Committee therefore recommends that, as an integral part of optimal therapy, rational pharmacotherapy should be the goal for all concerned with the use of prescription drugs in Ontario.

A centre for the study and promotion of rational drug prescribing has been proposed at McMaster University by its Dean, Dr. S.M. MacLeod (submission January 29, 1990). "Such a centre would include either under one roof, or in a network arrangement, a variety of disciplines which could contribute in one way or another to improve drug prescribing." We believe that such a centre is long overdue in Canada.

7.2 The Committee therefore recommends that the Ministry of Health invite the pharmaceutical industry to jointly investigate the possibility of shared funding for an Ontario centre for the study of drug prescribing. It would be attached to one health science centre, with linkages to practising physicians through the Royal College of Physicians and Surgeons of Canada, the College of Family Practice of Canada and the Ontario Medical Association, and to departments of clinical pharmacology that, we believe, should be established in each Ontario faculty of medicine (see recommendation 7.17.)

7.1.1 Informed Consent for Treatment - The Drug Information Dilemma

To some extent, consent for treatment is implied in the usual treatment context when a patient comes to the physician for help with a problem. The power for good is inextricably bound up with the risk of harm. It is generally agreed that: "Informed consent for treatment is a sine qua non of ethical therapeutics but how much information is enough to make sure that consent is informed? Excessive zeal in warning of unpleasant or potentially dangerous unwanted effects can lead to rejection by patients of essential treatment (by, for example, a severely depressed patient who is apprehensive about the possible adverse effects of anti-depressants.) Increasing numbers of informed patients are aware of the simple but useful concept of the risk/benefit ratio and understand that there is potential risk associated with many ordinary daily activities. Clearly, any drug powerful enough to require a prescription and to produce therapeutic benefit has a potential for harm. Many unwanted effects of drug products are the inevitable and predictable pharmacological response to sufficient medication to achieve the intended therapeutic purpose. Explanation of this difficulty could encourage patients to tolerate side effects if they perceive the overall balance to be in their favour.

"In a perfect world, all prescribers would explain the purpose and potential problems of each treatment for each patient. In practice this may require only minimal explanation, especially for short-term, acute illnesses. Generally, however, the extent of patient education required increases in direct proportion to the chronicity of the malady under treatment.

"At first glance, well-written medication information leaflets seem to provide the answer to many physician-patient information and communication problems. However, some of these leaflets seem to place undue emphasis on potential adverse effects so that the patient may become frightened and non-compliant. Printed handouts complement, but cannot replace, appropriate explanations by prescribers." (The role of the pharmacist in this area is discussed in section 8.1.)

"Paternalism has become unfashionable in theory, but in practice, many patients still prefer to trust their physicians rather than try to learn enough about treatment issues to

decide for themselves. If this delegation of responsibility occurs, it should be the patient's explicit or implicit decision."[9]

Patient education about all aspects of treatment is very important and is the responsibility of the whole health care team. Physicians generally begin this process when they obtain consent for treatment. The Inquiry supports an expanded role for pharmacists (section 8.1) in such education; the role of nurses (section 8.2) is also increasing appropriately. Poor communication between prescribers and patients, leading to bad outcomes, was stressed in many submissions.[10]

7.1.1.1 The Physician: Patient Advocate or Gatekeeper for Society?: Should physicians only be responsible to their individual patients or also to society at large? Legitimate concern about rising health costs highlights the role of physicians as designated guardians of society's resources. The ethical problems inherent in this role must be examined.

Pellegrino, an influential American medical ethicist, asks: "To what extent can, or should, the physician serve simultaneously the needs of his patients, his own interests, and those of society? To what extent should the physician be a double, triple, or even quadruple agent?" He concludes:—"There is in the nature of the medical transaction, an unavoidable gatekeeping function which the physician has always exercised and, indeed, is under compulsion to exercise in a morally defensible way. The unavoidable fact is that the physician recommends what tests, treatments, medications, operations, consultations, periods of hospitalization, or nursing homes the patient needs. Currently, the fact is that the physician monitors the flow of 75 per cent of today's health and medical care expenditure.

"This fact imposes a serious positive moral obligation on the physician to use both the individual's and society's resources optimally. In the case of the individual patient, the physician has the obligation, inherent in his promise to act for the patient's welfare, to use only those measures appropriate to the cure of his patient or alleviation of his suffering.

"The physician, therefore has a legitimate, indeed, morally binding responsibility as a 'gatekeeper'. He must use his knowledge to practice competent, scientifically rational medicine. His guidelines should be a diagnostic elegance—just the right degree of economy of means in diagnosis—and therapeutic parsimony—just those treatments that are demonstrably beneficial and effective. In this way, the physician automatically fulfils several moral obligations: he avoids unnecessary risk to the patient from dubious treatment and he conserves the patient's financial resources and society's as well."[11]

Pellegrino contrasts this traditional, desirable and acceptable gatekeeper role with external measures that deliberately interject economic considerations into the physician's clinical decisions. Pellegrino asks "is rationing inevitable?" The only argument with some moral substance is economic necessity. Disproportionately rising costs of drug treatment (and certain other interventions) in Ontario could be considered as threatening the availability of other health and social services.

If this line of reasoning is accepted, rationing becomes not only inevitable but, perhaps, defensible too. He also concludes "...that the integrity of the physician's primary responsibility to his patient is something society must preserve, rationing may not be as inevitable as generally supposed and that before we can

[9] OMA Committee on Drugs and Pharmacotherapy, "Informal Consent—The Drug Information Dilemma," The Drug Report, No. 21, February 1987.
[10] For example, by the Association of Jewish Seniors (brief #59-3100) which incorporated accounts of many individual experiences.
[11] Pellegrino, E.D., "Rationing Health Care: The Ethics of Medical Gatekeeping," *Journal of Contemporary Health, Law and Policy*," (1986), pp. 23-45.

impose rationing on morally valid grounds, all other means of cost containment must be exhausted."[12]

It seems clear that the individual physician's role is to act as advocate for the patient and to prescribe optimal rational pharmacotherapy. This must necessarily be tempered by the patient's ability to pay when he or she is paying directly. When a third party payor is picking up the cost, the physician must either prescribe drugs that are covered by the plan, or make sure the patient is able and willing to pay any supplemental cost. This applies whether the third party is the Ontario Drug Benefit (ODB) program, an insurance company or another drug plan.

Which drugs are covered, and the way in which decisions about coverage are made, should be clear to patients or their representative (e.g. union negotiating team). When the taxpayer is ultimately responsible, as in the ODB, it is essential that taxpayers' money be spent judiciously.

7.3 The Committee therefore recommends to the College of Physicians and Surgeons of Ontario and the Ontario Medical Association, that individual prescribers be encouraged to remain advocates for, and responsible to, individual patients. Organized medicine, on the other hand, has a role in protecting society's resources .

7.1.1.2 The Quantities of Drug Prescribed: Each prescription instructs the pharmacist as to how much of the drug product to dispense; it may or may not allow the prescription to be repeated.

The quantity prescribed should ideally be individualized for each drug product for each patient and will vary from a single dose to quantities sufficient to last an extended period of time. For an acute disorder it is often appropriate for the physician to prescribe a course of treatment likely to cure the problem; a repeat would not ordinarily be required. For on-going, chronic, and sometimes permanent conditions requiring long-term use of medication, the optimum number of doses is much less clear. When a new drug is to be used by a patient for the first time it is often appropriate for the initial quantity prescribed to be small. It is always possible that the "new" medication may not suit the patient and waste ensues if large quantities are prescribed initially. It is logical to regard all such "first prescriptions" as therapeutic trials for that patient.

For chronic and ongoing therapy there are a number of points to consider. The cost of the prescription includes both the price of the drug and the pharmacist's dispensing fee. Clearly, total costs are minimized by reducing the number of repeat prescriptions so long as quantities prescribed are consistent with good medical practice and do not become so large as to lead to waste. For many years, the ODB program only allowed a 31 day prescription limit; this was changed in 1986 to allow quantities for up to 250 days. However, many physicians have never moved away from routinely prescribing monthly amounts.

An anonymous submission made the accusation: "Many physicians insist on seeing healthy patients every 30 days to maximize their billing frequencies. They prescribe only enough medication to allow the patient to get to the next office visit. No prescription renewals are allowed from these physicians. The patients do not understand that they are simply pawns in a chess game being used by the physicians to maximize their incomes."[13]

12 Ibid.
13 Brief #21-3200.

Clearly, bad medicine is being practised where this occurs. However, there may well be sound medical reasons for the physician to see the patient monthly and correlation with the amount of drug prescribed can help monitor compliance. Sometimes it may be appropriate for the physician to allow repeats at weekly, or monthly intervals, for example, while relying on the pharmacist to monitor treatment.

In contrast, monthly prescriptions of long-term medication can waste resources if frequent monitoring is not necessary. The economics are as follows: Under the current legislation a prescription for a large volume (with the exception of short-term social assistance coverage for patients on general welfare) is to be dispensed in the quantity written. If the physician writes a prescription for 250 days supply, the pharmacist will dispense that amount and charge two dispensing fees.[14] However, many physicians will write the prescription for 30 days supply, with seven repeats (which will yield 240 days' supply). Under this situation, the pharmacist can charge eight dispensing fees—one for the initial prescription, and one for each repeat.

7.4 The Committee therefore recommends that the Ontario Medical Association and the College of Physicians and Surgeons of Ontario, with input from the Ontario Pharmacists' Association and the Ontario College of Pharmacists, jointly study the appropriateness of the quantity of drugs on a prescription and issue appropriate guidelines.

7.1.2 The Ontario Situation

Having considered an ideal situation, and some theoretical aspects of prescribing, we now turn to the current practice in Ontario.

The Inquiry commissioned "A survey of the prescribing experiences and attitudes toward prescription drugs of Ontario physicians" (see appendices, volume II.) While the report which resulted from this survey gives illuminating insights into physician attitudes toward many aspects of drug treatment, its limits must be noted; it records subjective opinions rather than objective facts. As such, it does not provide hard evidence about the knowledge base that Ontario physicians possess regarding the proper use of drugs.

A number of findings emerge from the analysis in chapter four of the survey report:

"First, physicians estimate that roughly a quarter of the drugs they are familiar with do not produce results commensurate with their costs. While the survey data are insufficient to determine whether physicians avoid such drugs because they are too expensive in relation to their effects, or whether physicians still prescribe such drugs for lack of alternatives, this finding suggests a potential problem in the pharmaceutical marketplace. Interestingly, physicians also estimate that about half of the prescriptions they write are for generic drugs, suggesting both a concern for costs, and the perception that generics, in many cases, can be substituted for brand name products.

"Second, although demands from patients for prescription drugs and patients' expectations for a quick cure have been cited as important influences on physicians' prescribing decisions (Mahon and Godden, 1973; Schwartz, Soumerai and Avorn, 1989), physicians in the survey report relatively few requests from patients for drugs without proper consultation, and few prescriptions which are not medically necessary.

[14] The pharmacist is allowed one dispensing fee for up to 100 days' supply of a drug dispensed. 100-150 day's supply gives one and one-third fee, 150-200 one and two-thirds fee, and 200-250 two fees.

"Third, physicians report that roughly once for each four prescriptions written they counsel reductions in drug use, and that about half the time they discuss prescription drug utilization with their patients. However, high volume prescribers report that they counsel reductions and review drug therapies less often than those average rates indicate. Thus, significant numbers of prescriptions written in Ontario would not appear to be accompanied by specific discussions or reviews of the patient's drug use. The literature suggests that such discussions play an important role in ensuring prescribing quality (Schwartz, Soumerai and Avorn, 1989: 577).

"Fourth, large numbers of Ontario physicians report some involvement in profession-related events including seminars and continuing medical education courses which potentially provide them with relevant information about drugs and drug prescribing. The average Ontario physician attended three physician-sponsored seminars about prescription drugs in the two years before the survey. However, the frequency of government and professional reviews of prescribing practices is almost zero and there is little direct communication between prescribers and dispensers about the prescription drugs used by patients.

"Fifth, compared to their involvement in profession-related events, physicians report more extensive contacts with the pharmaceutical industry, another important source of information about prescription drugs. For instance, while physicians are contacted by pharmacists about once every six months, they are visited, on average, once every two weeks by pharmaceutical company representatives. Similarly, the average number of physician-sponsored seminars attended in two years is three; the average number of corporate-sponsored seminars attended is just over five. And while high volume prescribers tend to be involved in more profession-related events than physicians prescribing fewer drugs, they are also more likely to have contacts with the pharmaceutical companies, and these latter contacts are substantially more numerous. On average, physicians who write more than 70 prescriptions per week are visited by pharmaceutical company representatives once each week. Since information transmitted to physicians during the course of such contacts is likely to be as much promotional as educational, designed to promote the sale and utilization of specific pharmaceutical brands, this pattern of results raises questions about the objectivity and accuracy of information physicians have about prescription drugs (Carruthers, Goldberg, et. al., 1987: 178; Lexchin, 1988; Thompson, 1988).

"Sixth the apparently greater attractiveness of industry-sponsored, as opposed to profession-sponsored contacts, may be in part a function of the range of benefits offered to physicians by the industry. Significant numbers of Ontario physicians report that they accepted benefits from pharmaceutical companies in the two years before the survey. Among the most frequently reported benefits are meals and stationery; travel expenses and office services are least frequent. Just under 3 per cent say that they received computer hardware or software from the industry. It is important to note that in January 1989, in the period before the survey was conducted, the College of Physicians and Surgeons of Ontario informed all physicians in the province that the receipt of benefits from corporate sources constituted a potential conflict of interest and that physicians accepting such benefits could be disciplined. The estimates reported in this chapter may therefore tend to minimize the extent of benefits received."[15]

[15] Report on the 1989 survey of the prescribing survey of the prescribing experiences and attitudes toward prescription drugs of Ontario physicians by A. Paul Williams, and Rhonda Cockerill, p.31.

7.1.2.1 Attitudes of Ontario Physicians to their Education "as a preparation for prescribing drugs": In addition, physicians participating in the commissioned survey were asked to assess the adequacy of their formal, medical training as the basis for their own professional practices, to comment on the relative importance of various sources of information about prescription drugs, and to identify problems affecting their capacity to remain current in terms of professional knowledge in this area. The major findings in chapter 5 of the report can be summarized as follows:

First, while three-quarters of Ontario physicians rated their undergraduate medical education as an adequate basis for prescribing drugs, the remaining one quarter rated it as inadequate.

Second, in spite of these positive assessments of medical education, many physicians indicated that they are dissatisfied with their current knowledge of key aspects of prescribing. For instance, while two thirds of Ontario physicians are satisfied with their knowledge of drug effectiveness, only 15 per cent are satisfied with their knowledge of drug costs. Fewer than one quarter are satisfied with their knowledge of equivalencies of similar drugs or competing brands of the same drug; just over a third are satisfied with their knowledge of alternative non-drug therapies.

On the one hand, the majority of physicians say that they are satisfied with their medical training and the quality of information they receive on the effectiveness of the drugs they prescribe. On the other hand, only a minority indicate that their prescribing decisions are informed by what they believe to be satisfactory levels of knowledge about drug costs, drug alternatives, or alternative therapies not involving drugs. A lack of information in these areas, while not necessarily resulting in inappropriate prescribing, could mean that prescribing decisions are made without adequate consideration of the full range of treatment alternatives, including those which do not involve prescription drugs.

Third, although they are less than completely satisfied with their current knowledge about prescription drugs, only a minority of physicians identify problems in "keeping up" their professional knowledge in this area. About one in four evaluated the rate of introduction of new drugs, concerns about the credibility of available information, and the difficulty in assessing this information, as serious problems. However, one-third of all physicians, and half of the highest volume prescribers, judge "lack of time" as a serious problem. With large patient loads, time available to physicians for continuing education and for counselling patients decreases. Coincidentally, prescription volume and prescription density estimates increase with larger patient loads.

Fourth, professional meetings and journal articles are judged by the majority of physicians as important sources of information about prescription drugs in their own practices. Although the data in chapter 4 of the survey show that Ontario physicians attend, on average, just over one continuing medical education course per year, two thirds rate such courses as important information sources. Conversely, while physicians have relatively frequent contacts with the pharmaceutical industry, only a minority state that involvement in company-sponsored seminars, and contacts with drug company representatives, are important information sources.

Fifth, physicians who write the largest number of prescriptions, and thus have a disproportionate influence on aggregate patterns of drug utilization in the province, appear to have more significant problems than other physicians with key aspects of their current knowledge about prescription drugs and more serious problems "keeping up."

They are also most likely to say that lack of time is a serious problem. The literature suggests that lack of time may be strongly and inversely related to prescribing quality (Schwartz, Soumerai and Avorn, 1989).

While attending more profession-sponsored courses and seminars than other physicians, high volume prescribers also have significantly more contact with the pharmaceutical industry, receive a wider range of corporate benefits and judge industry contacts as relatively more important sources of information about prescription drugs than do other physicians. This does not necessarily argue that industry contacts or industry-sponsored benefits cause physicians to prescribe inappropriately or in high volume. It does indicate that when faced with lack of time and uncertainty, familiar sources of information may have an important influence on prescribing decisions (Carruthers, Goldberg et. al., 1987: 178). Physicians who rely more heavily on drug company sources for their information have also been identified in the literature as less rational prescribers (Lexchin, 1988).[16]

7.1.3 Education of Physicians for Pharmacotherapy

The educational system for health care professionals clearly needs to emphasize "learning to learn" as well as the scientific and professional curricula. Rapid continuing change seems certain and all health care professionals must be prepared for it during their formative years. We believe the education of physicians about drug therapy to be less than satisfactory at present.
Many submissions to the Inquiry stressed the key role of physician education in achieving the goal of optimal therapy.[17]

Education, as it relates to therapeutics, can be divided into undergraduate, post-graduate and continuing medical education segments. During each of these periods of education for rational pharmacotherapy the goals to be achieved must be clearly defined, the methods of achieving these goals considered, and the milieu and sources of information determined, so as to provide comprehensive, accurate and impartial drug information which will promote rational prescribing habits. The interplay of student (or physician) and instructor(s), and the principles of drug evaluation and usage on which therapeutic decision-making is taught, should continue to guide prescribing throughout the physician's career. For their entire professional lives, physicians must evaluate critically the claims made in the promotion of drug products. Less basic pharmacology is taught in Canadian than in the American medical schools, and wide variations exist in the amount of formal instruction in clinical pharmacology. A recurring theme is the inadequacy of some medical school trainees in the daily application of knowledge of drugs in real-life situations.

It is increasingly difficult for physicians to keep abreast of important developments in pharmacology, although pharmaceutical companies have been quick to fill this educational gap. It is estimated that American pharmaceutical firms spend some $5,000 per physician per year to encourage use of their products. Survey figures of the Pharmaceutical Manufacturers Association of Canada suggest that the amount spent here is between $6,500 and $10,000.

Although about half the graduates of the Canadian medical schools will practice as primary care physicians in the community, all students are trained primarily in large

[16] Schwartz, R.K., S.B. Soumerai, J. Avorn: "Physician motivations for nonscientific drug prescribing." *Social Science and Medicine*, 28:6 (1989), pp. 577-582.
[17] OMA, Medical Reform Group, Association of Jewish Seniors and others.

teaching hospitals where most teaching involves acutely ill people with serious illness. Education about appropriate treatment strategies for such patients does not necessarily prepare physicians well for community practice. In the community, illness tends to be more chronic or self limiting, and frequently calls for a different therapeutic approach.

In some universities, attempts are being made to help integrate clinical with basic pharmacology, to assist students to develop better problem-solving skills and become more familiar with reference sources.

7.1.3.1 Undergraduate Education for Pharmacotherapy: Medical students receive formal instruction in the basic principles of pharmacology and therapeutics during their medical undergraduate years. We believe courses should be modified so that in addition to basic principles of prescribing, sessions are devoted to special issues in pharmacology, including those related to geriatrics. Issues such as multiple symptom control, compliance, multiple disease effects, drug interaction and adverse drug reactions, should be highlighted. The role of pharmacists and pharmacologists can be introduced at this point and the issues of polypharmacy stressed.

This initial exposure to pharmacology and therapeutics, usually introduced in the first year, should be followed, during the next two clinical years (prior to clerkship) with specific focused sessions on drug usage and specific problems as each of the systems (cardiovascular, respiratory, gastro-intestinal) are dealt with. Sessions devoted to the evaluation of drug usefulness, and the issues involved in the introduction and use of new drugs, are necessary to help students learn how to make best use of information supplied by pharmaceutical companies. Methods of critical evaluation of drug usage and cost/benefit/effectiveness should become part of a medical student's approach to prescribing. Prescribing strategies should be, but rarely are, discussed in medical pharmacology courses.

The clerkship year should contain a number of didactic sessions from physicians skilled in general and geriatric drug prescribing, as well as from pharmacists/pharmacologists, in order to develop the basis for a proper working relationship and knowledge of the synergistic role of the professions. During the clerkship year, specific clinical experience in geriatrics should be provided and emphasis on drug prescribing and its rationale and consequences should be included. (This is discussed in greater detail in chapter 11).

7.5 The Committee therefore recommends that the Council of Ontario Faculties of Medicine encourage educational initiatives at each of Ontario's medical schools to include:

a) Pilot studies to determine the effectiveness of changes in undergraduate and postgraduate curricula which emphasize the cultivation and maintenance of good prescribing practices;

b) Greater integration of basic and clinical sciences, in particular integration of pharmacotherapy with pharmacology;

c) Greater recognition by clinical specialist departments of the differences in the pattern and types of morbidity found in university teaching hospitals and community practice;

d) More emphasis on critical appraisal of drug products throughout the medical curriculum; and

e) More emphasis on the specific medical problems and treatment needs of the elderly. (See also chapter 11.)

7.1.3.2 Internship and Residency Education for Pharmacotherapy: During the post-graduate period (internship and residency) many lifelong prescribing habits will be formed. Much is learned on an "apprenticeship" basis, with the responsibility of teaching delegated to the clinical teachers who guide interns and residents through these years. Good role models are essential.

One year (soon to be increased to two) of internship is required for all physicians before licensure in Ontario. During the various rotations involved in an internship most aspects of drug prescribing are supposed to be learned. Unfortunately, this is not always the case since very much depends on the strengths, weaknesses and special interests of the staff physicians and hospitals organizing the internships. For example, there is likely to be too little formal exposure to the medical problems of geriatric patients and to the principles of geriatric drug prescribing. All interns should have formal exposure to geriatric medicine and specific instruction in the principles and practices of rational drug use by the elderly.

The residency period is that time when a physician in training focuses on an area of dedicated study and learns the body of knowledge appropriate to that specialized field. This involves three to five years of additional clinical experience. Interns and residents should learn the essentials of proper drug audit procedures.

Formal rotation at the resident level in a geriatric service and long-term care facility, with a special emphasis on drug prescribing, should be a mandatory part of the core period in internal medicine. A specific geriatric rotation should also be included in the core training of residents going into surgery and/or anaesthesia although, if properly organized, the internship experience may be adequate for this purpose. (See chapter 11.)

7.6 The Committee therefore recommends that educational initiatives at the medical postgraduate level include:

a) Regular review of pharmacological aspects of therapy;

b) Improved integration of clinical pharmacology in all services including surgical units;

c) Improved audit procedures regarding the use of drug products (see also drug utilization review); and

d) A specific geriatric experience at either intern and/or residency level.

7.1.3.3 Continuing Medical Education: The method by which physicians receive continuing education once they enter practice is critical to the assurance of ongoing sound drug prescribing. Maintaining an appropriate knowledge base is necessary. Because of wide individual variations in the way people learn best, there should be a variety of options open to prescribers.

The process of continuing medical education is complex and includes the integration of drug information from various sources. Physicians' prescribing habits are influenced by personal experience; reading; exposure to advertising; through peers and consultants; lectures, seminars and courses; pharmaceutical company representatives; patient pressures; attendance at pharmaceutical company sponsored educational sessions; and specific prescription-oriented literature.

Each of these methods of receiving new information is used in varying degrees by practising physicians. In academic settings, lectures and seminars, the medical literature and discussions with colleagues probably play the greatest role in maintaining the knowledge base and implementing change. For physicians in community practice, there may be more dependence on formal

educational seminars (through hospital grand rounds, etc.), on pharmaceutical company advertising, pharmaceutical representatives and industry-sponsored seminars, and on discussions with colleagues and special consultants. A variety of journals and tapes may often be a major resource.

Pharmaceutical manufacturers are well aware of the impact that specialists and respected consultants have on the prescribing habits of community physicians, and direct a great deal of effort to promotional activities aimed at specialists.

While these sources of information may expose physicians to an array of choices, there should also be an unbiased source of prescribing information to provide appropriate prescribing data and evaluate and compare various alternatives, not only for therapeutic efficacy and side effect profile, but for relative cost/benefit. This resource, frequently updated, with the essential features to assist physicians in general prescribing decisions, and with a special emphasis on issues related to the older patient, should be available to all physicians.

With the continued growth of the pharmaceutical industry, the number of new drug products will continue to expand considerably. Better methods will have to be developed to ensure that health care providers have easy access to information that assures rational prescribing. The traditional reliance on scientific articles in medical journals, coupled with the innovators' advertising, may not give a sufficiently balanced perspective.

Regular updates on various aspects of pharmacotherapy are published in a variety of journals catering to both general and specialist prescribers. If "Choice of Medications—Ontario 1990" is to be published, (see recommendation 7.9) regular monthly updates would be desirable and could be included in the existing Ontario Medical Association (OMA) publication "The Drug Report."

A method of integrating the drug prescribing, dispensing and record keeping systems of physicians and pharmacists would be very useful. A comprehensive computer-based system would allow a proper drug utilization program to be implemented. Such a system would be a powerful tool encouraging continuing medical education, but it should not be used in a punitive fashion. The most effective outcome would be its mutual acceptance as an educational tool.

Education can be effective in producing a sustained impact on prescribing practice. Drug utilization review is an essential element of the educational process since it provides the informed basis for dealing with real problems. There is little hard evidence that sustained changes in drug prescribing behaviour are achieved by drug bulletins, awareness campaigns, lectures, seminars, video or audio tapes, price lists, reminder notes or checklists, decision-making algorithms, handbooks, guidelines, mailed brochures and "unadvertising" alone. However, despite the lack of "proof," we believe that educational projects and guidelines such as "Choice of Medications—Ontario 1990" are useful.

There is reasonable evidence that sustainable effects on drug prescribing can be achieved by designing interventions that: 1) are specifically designed, based on actual patterns of prescription by individual physicians in the local practice environment; this requires some type of audit process, such as drug utilization review; 2) target heavy prescribers; 3) focus on specific drugs such as antibiotics or tranquilizers, when these are prescribed erratically or idiosyncratically; 4) make use of special interventions such as unbiased detailing;

5) incorporate feedback to individual physicians on their drug prescribing patterns'; and 6) include verbal counselling of individual physicians.

The willingness and ability of the medical profession at large to accept or implement such systems is unknown and the Committee believes that a great deal of attention to these aspects will be needed. However, we are encouraged by the positive attitude of a number of physicians with whom we have discussed this.

7.7 The Committee therefore recommends that:

a) The Council of Ontario Faculties of Medicine, the Ontario Medical Association and the College of Physicians and Surgeons of Ontario be asked, by 1991, to develop new, imaginative and effective programs in continuing medical education which will encourage participation of a greater proportion of physicians; and

b) That the Council of Ontario Faculties of Medicine, in conjunction with the Drug Quality and Therapeutics Committee, the Pharmaceutical Manufacturers Association of Canada, the Canadian Drug Manufacturers Association, Health and Welfare Canada, Canadian Pharmaceutical Association and the Ministry of Health be asked to develop, by 1993, innovative post-marketing surveillance studies, of a variety of pharmaceutical preparations, both brand names and generics, and involving large numbers of family practitioners.

7.2 The Role of Government and Medical Associations

Earlier, we endorsed the role of the individual physician as the unreserved advocate for the individual patient. We now consider the role of organized medicine.

A basic strategy should be to make it as easy as possible for the physician to prescribe well and to discourage less appropriate prescribing. In this section we discuss and give our reasons for supporting: 1) Appropriate guides to treatment; 2) The publication of "Choice of Medications—Ontario 1990"; 3) "Restricted use" of expensive medications where acceptable alternatives exist; 4) The continued development of restricted hospital formularies; and 5) The extension of the restricted formulary approach to group clinics, nursing and old age homes, health maintenance organizations and comprehensive health organizations.

In each of these instances, it is imperative to ensure full medical input, as well as contributions from pharmacy and the other health care professions. The method of decision making should be clear and widely known to all concerned.

We also briefly discuss the drug name problem, treatment review requirements, detailing of drug products, the role of the clinical pharmacologist and prescriber/ pharmacist relations.

7.2.1 Appropriate Guides to Treatment

The central promulgation of 'standards', 'norms' or 'parameters' for clinical care can understandably be threatening to individual health care professionals and to the patients they serve. Rigid and inappropriate standards can interfere with the proper doctor/patient relationship, can make it more difficult to individualize treatment, can lead to less than optimal treatment if clinical judgement suggests deviation from "standard" and can, ultimately, lead to a poor outcome for the patient. Although adequate studies of 'outcome' review are highly desirable they are very often not available and prescribers must

choose the 'best buy'.[18] As part of the approach to rational pharmacotherapy, the health care professions should define guidelines for efficient and appropriate medical care.

"It is now clear that the enormous complexity of medical advances often exceeds the capacity of any individual physician to read the voluminous literature, analyze the complex data, and synthesize an optimal practice pattern. For example, not one doctor in a thousand has the time or training to produce the recently distributed guidelines for the testing and treating of asymptomatic hypercholesterolemia, which were designed to identify and promote exemplary clinical practice. This document also identified cost considerations, but cost did not at any time supersede considerations of quality of care. The OMA has also successfully developed guidelines for in-vitro fertilization and for the use of coronary thrombolytic agents; in each case optimal clinical practice was the primary objective."[19]

7.2.1.1 Guideline for Guidelines: "Guideline for guidelines"[20] as they apply to the medical practice have been articulated by the OMA and they suggest:

1) Guidelines for medical practice are written to help improve the quality of care. They must never be rigid standards because individual variations, and the diversity of good medical practice, do not permit standardization. Guidelines for medical practice must not include restrictive definition of details, such as expected length of hospital stay, or impose limits to permitted testing or treatment. They must never become parameters which could be used by funding agencies to restrict the provision of care to patients who need it.

2) Guidelines must be voluntary and permissive.

3) Guidelines should incorporate sensible economic evaluation of drugs, technology or procedures, but must not promote the restriction of an effective therapy for purely fiscal reasons.

4) Guidelines must be sensitive to social and humanitarian considerations and must be open to criticism and debate by the medical profession, by other health-care providers and, where appropriate, the public.

5) Guidelines clearly apply to restrictions on limited prescribing, such as treatment protocols and restricted formularies. It should be noted that guidelines directed at optimal clinical practice may well promote increased expenditure rather than constraining costs.

The OMA goes on to emphasize the necessity of involving specialty societies and others: the Royal College of Physicians and Surgeons, the College of Family Practice, the universities, the College of Physicians and Surgeons of Ontario and other disciplines as appropriate. Guidelines must clearly be subject to constant review as advances in medical management occur.

Although its primary objective remains first class care for patients, the medical profession can no longer ignore the cost of expensive drugs or procedures. But as we have shown, it is not always easy to balance quality of individual care and the good of society as a whole.

7.8 The Committee therefore recommends the development, by the profession of medicine, through its various organizations, of appropriate guidelines to treatment.

[18] Whitehouse, J.M.A., "Best Documented Practice," *British Medical Journal*, 298, (1989), pp. 1536-7.
[19] Linton, A.L., Supplementary Report to Council, OMA, May 15, 1989.
[20] Linton, A.L., "Guidelines for Medical Practice I," and David Peachey & A.L. Linton, "Guidelines for Clinical Practice II: A possible strategy," (Submitted to the Canadian Medical Association Journal for publication.)

7.2.2 "Choice of Medications—Ontario 1990"

The Inquiry's third interim report stated: "Ontario physicians do not have ready access to a concise but informative up-to-date and impartial guide to prescribing as there is no Canadian equivalent to such publications that have proved useful elsewhere in the world. While basic textbooks of pharmacology are available and there is much literature provided by pharmaceutical manufacturers, as the OMA reported, it is increasingly difficult for physicians in practice to keep abreast of....hundreds of new products which have been introduced in the last decade. The OMA has recommended, and is willing to take the lead in, the development 'of a publication that would provide a basic guide to effective and economical pharmacotherapy.' This is envisaged as a concise, authoritative publication compiled by an editorial board comprised of appropriate independent health care professionals (clinical pharmacologists, nurses, pharmacists and practising physicians.)"

The name "Choice of Medications–Ontario 1990" has been suggested. The need for such a publication is reinforced by the 1989 survey of Ontario physicians which demonstrated that only 15 per cent of respondents were satisfied with their knowledge of drug costs.

Information provided by pharmaceutical manufacturers, such as that found in the "Compendium of Pharmaceutical and Specialties," (CPS) will continue to be useful and reliable. The CPS, however, does not consider costs and does not attempt to select "best choices" within therapeutic categories. It does, however, give a wealth of detail and is especially useful as a reference work and guide once a particular drug product is chosen.

7.9 The Committee therefore recommends that "Choice of Medications–1990" be published and made available, on an annual basis, to all licensed physicians and pharmacies in Ontario. The publication should contain guidelines for prescribing based upon objective information about preferred drug products, including their indications, contraindications, side effects, recommended dosages and relative costs.

Physicians would, of course, remain free to prescribe any approved medication if, in their view, the preferred medications are not appropriate in specific cases.

7.2.3 Restricted Use of Expensive Medications

In the first quarterly report, the Committee suggested the abolition of "special authorizations" and the development, by the Drug Quality and Therapeutics Committee (DQTC), of a "restricted use" category for some drugs. "Restricted use" means that the physician must be willing to certify that the drug is being used in the manner, and for the specific use, listed in the ODB formulary. Physician compliance can be assured by the usual peer review procedures. Despite criticism from the pharmaceutical industry, it appears this is a sound concept, acceptable to most patients and physicians. It seems imperative that society gets the best possible value for tax dollars spent on health care services. Development of a restricted category does not restrict a patient's right to be treated with an expensive drug for indications other than those authorized in the formulary. It does, however, mean that the taxpayer does not have to pay in such cases.

7.10 The Committee therefore recommends that the Ministry of Health continue to be guided by the DQTC as it develops the "restricted use" concept in the Ontario Drug Benefit formulary. (See also recommendations 4.2 and 4.3.)

7.2.4 Restricted Hospital Formularies

Many presentations at the Inquiry's open hearings emphasized the value of relatively restricted hospital formularies. The contrary view was expressed by the pharmaceutical manufacturers, who take the position that any approved legal drug should be available in hospitals, regardless of cost.

The Inquiry believes that restricted hospital formularies have proved beneficial, by both improving the quality of pharmacotherapy and conserving scarce resources. Most hospitals in Ontario are believed to have effective formularies and their constant updating and improvement should be encouraged.

7.11 The Committee therefore recommends that the Ontario Hospital Association be asked to foster the continued development and use of restricted hospital formularies.

7.2.5 Restricted Formularies Out of Hospital

The success of the restricted hospital formulary concept encourages its extension to other situations. Whenever an organized medical staff can, with pharmacist support, set up a "drugs and pharmacotherapy committee," the development of an agreed restricted formula may be appropriate. A key ingredient for success is likely to be the level of physician involvement and enthusiasm for the project in the local setting.

7.12 The Committee therefore recommends that the Ministry of Health, the Ontario Medical Association and the Ontario Pharmacists' Association promote the extension of the restricted formulary approach to group clinics, nursing and old age homes, health maintenance organizations and comprehensive health organizations.

7.2.6 Drug Names

There is no possibility that any action taken in Ontario can resolve the world-wide difficulties with drug names but rational pharmacotherapy is probably best served when all concerned use non proprietary (generic) names for drug products.

Any drug may be named as:

1) A chemical entity. The full chemical name is useful for the chemists who manufacture and study it, but practically useless for prescribing.

2) A non-proprietary or generic name. The term generic really means "part of a family" and should properly be used when discussing a class of drugs, eg. "a sulphonamide," "a benzodiazepine." In Ontario the use of "generic," as meaning non-proprietary, seems well established and we so use it in this report.

3) A proprietary or brand name. This defines a trade mark applied to a drug product that is a particular formulation of a chemical by a particular manufacturer.

Clinical pharmacologists world-wide advocate the habitual use of non-proprietary names in prescribing. This promotes economy, reduces confusion when patients travel to another country where brand names are different, and usually gives some information as to the class of drug prescribed.

We support this. Nevertheless, because new drugs when first introduced are usually known by the innovator's proprietary name, all concerned have to learn at least two names for many drugs. [The proprietary and the non-proprietary (generic) names.] Use of non-proprietary names is not a panacea for avoiding medication errors and can even increase confusion. For example cefotaxine (proprietary Claforan) can easily be confused

with cefoxtin (proprietary Mefoxin) if non-proprietary names are used. Use of the brand name would obviate confusion in this type of situation.

7.13 The Committee therefore recommends that the use in Ontario of non-proprietary (generic) drug product names be encouraged in the writing and labelling of prescriptions, except where there is a special reason to use a brand name.[21]

7.2.7 Treatment Reviews

Steadily increasing numbers of Ontarians, especially the elderly, are properly being treated with long term pharmacotherapy. This is happening because previously fatal illnesses are responding to treatment (eg. ischemic heart disease and diabetes.) People seldom die young of infectious disease nowadays but live on to suffer from degenerative illness. Much morbidity and stress can be, and is, alleviated by long term pharmacotherapy for many of these people. Treatment must, of course, be individualized and needs to be reviewed and reassessed at appropriate intervals. The optimal frequency of review varies from patient to patient.

Such review is greatly helped when:

- one physician—often the family practitioner —is coordinating the treatment and keeping proper records;
- the patient brings in the medication at each visit, especially if hospital admission becomes necessary;
- medication lists are prepared and updated. ("Smart cards," which provide computerized access to the patient's drug profile may, in the near future, prove to be very useful); and
- the patient selects a regular pharmacy and the family pharmacist and the family physician communicate regularly.

Patients in hospitals and other institutions also need their drug treatments regularly reviewed. In an acute hospital situation, such a review may be necessary many times a day or, indeed, minute by minute (e.g. when cardiac shock due to a dysrhythmia is treated.) At the other end of the spectrum is the patient who will need to be treated for the rest of his or her life (eg. hypothyroidism), where a yearly assessment may be enough once an initial baseline has been established. It is probably not possible to regulate optimal review except to state that appropriate, deliberate and planned review is clearly necessary.

Despite the best efforts of all concerned, some adverse drug reactions are inevitable. Their recognition and reporting is an important part of the treatment review process (see section 9.3.)

The special problem of the long term use of sedatives, hypnotics and tranquilizers is discussed in chapter 9. In this area, regular review is especially important and it may require extra effort to obtain patient co-operation and compliance.[22] The Inquiry recognizes that treatment review is an integral part of rational pharmacotherapy and believes that considerable improvement is possible in this area.

7.14 The Committee therefore recommends that the Council of Ontario Faculties of Medicine, the College of Physicians and Surgeons of Ontario, and the Ontario Medical Association be asked to promote regular, appropriate, organized reviews of drug treatment.

[21] OMA and Medical Reform Group.
[22] Cohen, Howard "Medication and the Elderly–the Role of the Family Physician," brief #118-3100, Council on Aging of Ottawa–Carlton.

7.2.8 Detailing

Drug detailing by sales representatives who promote specific products is part of the competitive world of innovative drug manufacturing. For this reason, it inevitably fails as an unbiased source of information about drugs for prescribers. Drug detailing is accepted as part of the current health care scene world wide, and it is not realistic to advocate its abolition in Ontario, as some briefs to the Inquiry have recommended. It is also unrealistic to ban all forms of drug company advertising.

Although promotional drug detailing will undoubtedly continue, we believe it can be improved. The accredited pharmaceutical manufacturers' representative program, established by the industry, is an important first step in the professionalization of sales representatives. Accreditation can be built upon by increasing the breadth and depth of knowledge of the representatives, many of whom have already become trusted sources of information for prescribers. This type of trusting relationship with physicians and pharmacists clearly depends on the professional expertise and integrity of the representative, the promotion only of good products, and a helpful, realistic attitude...all attributes which would be enhanced through upgrading the detailing function.

An important part of both undergraduate and post graduate physician education about pharmacotherapy involves learning how to assess and compare the various treatment options. Learning to critically assess the information provided by pharmaceutical representatives should be part of this.

The pharmaceutical industry has found detailing to be a highly effective way of altering physician behaviour. As indicated earlier, the combined expenditures of pharmaceutical manufacturers to promote their products total $6,000 to 10,000 per year per physician. An important portion of this expenditure supports detailing. For rational prescribing to occur consistently, there may have to be some countervail to product-biased detailing.[23,24] An effective and cost effective American model exists but has not been widely applied.[25,26] In this model, physicians are "detailed" (informed) about selected problem areas of pharmacotherapy by unbiased specially trained pharmacists whose salaries are not paid by specific manufacturers. There could be problems translating the model to Ontario because at this time there may not be enough pharmacists with the necessary training and skills. Clearly, this human resource problem could be remedied in the future if this model were shown to be effective, and if there is the will to do so.

7.15 The Committee therefore recommends that, by 1992, the Ministry of Health establish pilot projects to test unbiased detailing in Ontario, based on the Harvard model. Consultation with the Ontario College of Pharmacists, the Ontario Pharmacists' Association, the College of Physicians and Surgeons, the Ontario Medical Association and the pharmaceutical industry should precede this.

7.2.9 Guidelines for Industry

The attitudes of Ontario physicians to the educational and promotional endeavours of the drug companies, as surveyed in 1989, are discussed on page 102. Drug company "inducements" to prescribers have varied from the purely educational (and acceptable) to the unacceptably expensive hospitality that

[23] Lexchin, J. *International Journal of Health Services*, 19:4 (1989), pp.663-679.
[24] Schwartz, R.K., S.B. Soumerai, J. Avorn, "Physician motivations for non-scientific drug prescribing," *Social Science and Medicine* 28:6 (1989) pp. 577-582.
[25] Soumerai, S.B. & J. Avorn, "Economic and Policy Analysis of University based Drug 'Detailing'," *Medical Care* 24:4 (1986), pp.313-331.
[26] Avorn, J. & S.B. Soumerai, "Improving Drug Therapy Decisions through Educational Outreach", *New England Journal of Medicine*, 308:24 (1983), pp. 1457-1463.

has become notorious. There is little to suggest that the vast majority of practising Ontario physicians fail to prescribe ethically. Professional standards of practice are maintained by the College of Physicians and Surgeons of Ontario, which also evaluates practice patterns and implements disciplinary action where appropriate.

In the area of post marketing evaluation of drug utilization, some physicians may be persuaded to engage in activities that could compromise the traditional principles of medical ethics and standards of practice. Steps must always be taken to ensure that there is no undeclared conflict of interest, or personal gain, on the part of a physician supervising a drug trial. Financial support for such activities should be structured so that participating physicians have no major personal financial stake in the issue. Remuneration for participating in the trial should be limited to compensation for time actually committed to the trial.

Physicians must also carefully consider the impact of other drug company supported activities, including seminars and conferences with major social activities. Gifts of various kinds, and payment for "educational" activities, should be kept in perspective. Support for educational activities from pharmaceutical companies should be utilized as objectively as possible and physicians should not be seen as "endorsing" any particular product line in connection with continuing medical education activities.

In general, physicians should not accept any reward or remuneration from a drug company unless they would be comfortable if peers and patients knew about it.

Drug company advertising in professional journals has been criticized in Canada and elsewhere but it is now well established as part of the world-wide innovative drug development scenario. The free market system has produced most of the effective new drugs which have improved treatment options, and we do not believe that restricting such advertising would, on balance, be in the public interest.

Federal legislation, together with the industry's own endeavours to regulate advertising, may have reduced inaccurate claims but seem to have done little to raise the tone above a "hard sell" sensational level. Prescribers, like other Ontarians, might well regard themselves as immune to exaggerated claims of great benefits for a drug with little or no risk. However, if this type of advertising were not effective, it seems doubtful that manufacturers and their advertising agencies would persist. Again education of physicians, both initial and ongoing, is the best defence.

7.16 The Committee therefore recommends that, by 1991, the College of Physicians and Surgeons of Ontario, after consultation with the Ontario Medical Association and the pharmaceutical industry, develop and publicize ethical guidelines for physician/industry interaction, which also deal with the industry's involvement in continuing medical education.

7.2.10 Clinical Pharmacologists

It has become clear to this Inquiry that the province needs many more clinical pharmacologists. Major roles for clinical pharmacologists include direct teaching of both physicians in training and their clinical supervisors; organizing appropriate continuing medical education for practising physicians; leading drug utilization monitoring programs; and continuing research. More clinical pharmacologists and more departments of clinical pharmacology will clearly cost money. In the long run they should save money by promoting rational pharmacotherapy.

There also appears to be an increasing need for institution-based pharmacists to be involved in teaching and monitoring drug usage in both academic and non-academic hospitals as well as in many long-term care settings.

In its submission, the Council of Ontario Faculties of Medicine (COFM) recommended: "the creation within Ontario of a network of clinical pharmacology education units. Such units should ideally be created in each of the five health science centres. They should bring together, within one program, a number of disciplines, as appropriate to the individual centre. These education units should be charged with the responsibility for undergraduate, postgraduate, and continuing education of health professionals. They should have a major responsibility for the development of clinical teaching units focused on optimal drug prescribing in each centre.

"The centres should have further responsibility for leadership in public education and for eventual recruitment of a network of dedicated 'advisers' on drug therapy who would function in a broader health region. They should be responsible for the training and later maintenance of competence for such drug advisers. Such advisers would, in turn, be expected to work with district health councils in development of community-based approaches likely to improve drug prescribing. Initially, the emphasis should be on education and training with the necessary supportive health care delivery research. The size of a clinical pharmacology education unit might vary from centre to centre, but should include a critical mass of clinical pharmacologists, clinical epidemiologists, toxicologists, clinical pharmacists, and health economists working in collaboration with scientists interested in pharmacology toxicology and pharmaceutical sciences."[27]

The Inquiry found this recommendation by COFM persuasive.

7.17 The Committee therefore recommends that the Ministry of Colleges and Universities be asked to promote and fund the establishment of a department of clinical pharmacology in each Ontario medical school. These should be closely linked to the centre for the study of drug prescribing (see recommendation 7.2.)

7.2.11 Prescriber/Pharmacist Relationships

Lack of adequate prescriber-pharmacist communication and prescriber/pharmacist friction are highly undesirable and potentially dangerous for the consumer.

Fortunately, at the organizational level the relations between prescribers and pharmacists in Ontario are excellent, as judged by the co-operative attitudes of their organizations (OMA, and the College of Physicians and Surgeons of Ontario (CPSO) with the Ontario Pharmacists' Association (OPA) and the Ontario College of Pharmacists (OCP).) Issues relating to pharmacists are considered in chapter 8, but in the context of prescribing it seems important to emphasize that local prescriber/pharmacist interaction is important. This is much easier to achieve in a hospital, or in a small town, than in Ontario's cities.

According to the report on the 1989 Survey of the Dispensing Practices and Attitudes Toward Prescription Drugs of Ontario Pharmacists (see appendices, volume II):

[27] Brief #52-5100.

"Many feel that the pharmacist/prescriber relationship needs improvement. Pharmacists feel that physicians have a poor understanding of what they actually do, especially in relation to over-the-counter drugs. Frequently, pharmacists believe doctors overprescribe, especially narcotics. They would like physicians to be more accountable for what they prescribe.

"One respondent remarked that Ontario is the only province where an agent for a doctor can phone in a prescription. Apparently some physicians are unwilling to answer calls from pharmacists and/or discuss drug therapies.

"There was also a suggestion that prescribers should have more information on the cost of various drug treatments. A number of pharmacists remarked that it would be useful for prescriptions to list a diagnosis/reason for treatment; this would be extremely useful when counselling patients."

In its fourth interim report, this Committee recommended that the pharmacist, when clinically appropriate and with the agreement of the patient, has access to the patient's diagnosis(es)." (See chapter 8).

This recommendation, and the recommendations for increased counselling by pharmacists, have the potential to lead to friction because of the perceived threat to physician autonomy.

7.18 The Committee therefore recommends that the Ontario Medical Association, the Ontario branch of the Canadian Society of Hospital Pharmacists and the Ontario Pharmacists' Association be asked to establish formal mechanisms, at provincial and local levels, that will increase professional liaison, as necessary, on the issues of patient counselling and communication, as well as other issues of mutual concern. We suggest that emphasis be placed on liaison at the community level on an individual and group basis.

In the common ambulatory care situation, when only the patient/prescriber and pharmacist are involved, it is highly desirable that there be agreement between prescriber and pharmacist as to who is doing what with regard to patient education. Proper use of the professional skills of pharmacists includes patient counselling about prescription and over-the-counter medication. The necessary patient education by the pharmacist will vary greatly according to circumstances. For proper teamwork, and the patient's best interest, there must be agreement to avoid duplication, potential confusion and the situation where each professional thinks the other has counselled the patient about the medication, when neither has.

In many situations it may be appropriate for the pharmacist to issue a drug information leaflet. Further, the Committee believes that local physician and pharmacist organizations could address this issue and agree on patient pharmacotherapy education in the community.

7.3 Hospital Formulary Committees

"The formulary is intended to improve the quality of drug therapy by restricting the prescribing choices to pharmaceutical preparations whose relative safety and efficacy have been judged superior to competing agents. Several studies have shown that the inclusion or deletion of a particular drug in to the hospital formulary is a major determinant of the use of drugs in a hospital (Hoffman, 1984 and Abramowitz, 1984.) For example, the removal of propoxyphene HCl from the formulary of a teaching hospital reduced its use from 40 per cent to less than 1 per cent (Hoffman, 1984.) Similar findings have been reported for other drugs (Huber et al, 1982 and Anandan, 1981.) However, a major study of formularies in 52 teaching hospitals in the USA found that the proportion of drugs incuded in the formularies, the relative safety

and efficacy of which were not up to standards, ranged from 9.3 to 69.7 per cent (Rucker and Visconti, 1978.) Lack of skills in comparative pharmacology and therapeutics on the part of physicians and pharmacists and the lack of feed-back from drug utilization studies, are given as major reasons for the inclusion of drugs into formularies that do not meet scientific requirements of efficacy and safety (Rucker and Visconti, 1979.)

"The inclusion or deletion of a drug from a formulary must be taken in the context of all other drugs included in the formulary. For example, gentamicin use increased after the deletion of cephalosporin in a hospital formulary (Reilly et al, 1978). Shifts in prescribing toward potentially more toxic and expensive drugs may result from an isolated restrictive measure (Plumridge et al, 1984). In summary, limiting drugs through a formulary may influence which drugs are given, but will not necessarily lead to a more rational approach to therapy (Harding et al, 1985)."[28]

The main discussion of the role of the hospital formulary committee is found in section 5.2, in conjunction with the hospital purchasing plans. But the effect of the hospital formulary committee is as much on prescribing practices as it is on acquisition of drugs for the practitioners within the institution. The committee is recommending guidelines that we hope will affect prescribing practices by establishing limited formularies and authorization requirements for prescriptions which do not fall within the formulary guidelines.

These guidelines are established for quality of care, as much as for budgetary reasons. Hospitals must make decisions with respect to what drugs to purchase within their global budgets. Until recently specific drug use in hospitals was not closely scrutinized but, with the very high cost of some of the newer drugs, hospital formularies do take cost-effectiveness into consideration.

The Inquiry supports the establishment of guidelines for the appropriate use of high cost drugs (such as the new non-ionic radio contrast media and TPA). Another agent of special concern is erythropoietin, which will be used more in an out-patient environment. A review process is currently in progress to assess the financial impact of such an agent and to establish guidelines for its optimal use based upon the scientific literature. We support this process and believe that it might be expanded to include the participation of drug information pharmacists.

7.19 The Committee therefore endorses the recommendation of the Task Force on the Use and Provision of Medical Services (Scott Task Force) to establish the Ontario Council on Health Technology Assessment, and recommends that as one of its tasks, that body evaluates new, high-cost drugs.

Hospitals also use the expertise of their own staff to improve the prescription practices in the institution. This educational function is much more formalized in the major teaching hospitals, but the involvement of expert clinical pharmacists, physicians and nursing staff in recommending drug administration policies, through the pharmacy and therapeutics committees, is widespread.

The Inquiry encourages the involvement of professional staff in the ongoing task of improving prescribing patterns in their institutions. Where possible, such initiatives should also be extended to smaller institutions—including nursing homes and homes for the aged—as part of the development of local formularies and formulary committees as recommended in chapters 5 and 6.

[28] Carruthers, G., T. Goldberg, H. Segal & F. Sellers. *Drug Utilization: A Comprehensive Literature Review*. Ontario Ministry of Health, Toronto, Ontario, 1987, pp. 184-185.

7.4 Non-Prescription Medications

Drugs available in Ontario without prescription, sometimes referred to as "over-the-counter," include many potent pharmaceutical entities. Examples are aspirin (ASA) and insulin. Many such drugs are important components of rational pharmacotherapy. The status of a particular chemical—whether it is categorized as a prescription, or non-prescription drug—is often as much an accident of history as a conscious decision to make the product subject to prescribing restrictions. In addition to useful qualities, all drugs have a potential for harm through adverse effects due to side effects, inappropriate dose, contra-indications and other factors. Therefore, the use of non-prescription products should be considered as carefully as the use of a prescription drug.

Many drugs available without a prescription fall in the category of "household, folk and traditional" remedies. As a result, consumers tend to see all the over-the-counter remedies in the same light—useful, but without potential for actual harm. The decision to self-medicate will often be part of 'I'll just try this and see if it helps' thinking. Self medication with non-prescription drugs can, unfortunately, be a first step in illness behaviour rather than a welcome substitute for an unnecessary physician consultation. However, proper use of household and folk remedies for minor self limiting conditions is to be encouraged. There are many good and safe preparations available without prescription, and most consumers use these products in the correct manner—to alleviate symptoms in minor or self-limiting illnesses. But there are also situations where consumers use products imprudently, without knowing the implications of that use. And, as in all other areas, the highest levels of usage, and therefore the highest levels of misuse, are found in the elderly.

Many non-prescription preparations contain ingredients with the potential for harm as well as for benefit. It is, of course, necessary for prescribers to know which medications are being taken so that unwanted and potentially dangerous interactions can be avoided.

Stoller has summarized this situation well: "Even a carefully monitored program of drug therapy can be undermined by older patients' use of over-the-counter medications. Self-medication also contributes to the risk of interactions, since patients rarely discuss over-the-counter drug use with their physicians. Uncontrolled and nondirected use of non-prescription drugs may also lead to toxicity, producing symptoms that in turn may be treated by additional drugs.

"A number of explanations have been offered for use of non-prescription drugs among the elderly. Use of these medications may be the first step in illness behaviour. Previous research has highlighted the importance of self-care in the management of illness, showing that the majority of symptoms are evaluated and treated outside the formal medical care delivery system.

"Bush and Rabin cited evidence that use of a non-prescription medicine is the initial response in almost half of all illness episodes, particularly for symptoms viewed as non-serious. Sharpe and colleagues argued that over-the-counter preparations may not be viewed as 'real' medicines and are probably used for minor or transient symptoms.

"Over-the-counter medications also may be viewed as a substitute for physician consultation. Palliative treatment of symptoms may seem preferable to professional consultation among elderly reluctant to admit to illness. Restricted access to medical care over the course of their lives may have generated greater reliance on self-treatment among current cohorts of elderly. Raffoul

suggested that this tendency to self-medicate may be reinforced by increased exposure to media advertisements of over-the-counter medications, exposures that he believes may increase with retirement. Furthermore, individuals who express scepticism regarding formal medical care and who believe that they understand their own health better than most professionals may be more likely to self-medicate with non-prescription drugs.

"In addition to relieving disease-related or stress-induced symptoms, self-medication may represent a direct strategy for coping with stressful situations. Lamy suggested that use of over-the-counter preparations or self-directed use of prescription drugs prescribed at another time may reinforce feelings of self-sufficiency among older patients.

"Not all older people use prescription and non-prescription medications with equal frequency, and researchers have identified a number of correlates to both types of drug use. For example, whites and women of all races were found to use both prescribed and over-the-counter medications more frequently than non-whites and men.

"Nonprescription drug use also has been associated with single person households and higher levels of education."[29]

In chapter 8 a number of recommendations are made with the objective of encouraging increased participation of pharmacists in drug counselling for consumers. This includes the assumption of greater control and responsibility in the use of non-prescription drugs.

7.4.1 Over-the-counter Drugs and Drug Benefit Programs

The decision to include or exclude prescribed over-the-counter medications as benefits under the ODB plan is contentious. If what is paid for by the plan is unrestricted, a wide variety of skin care preparations, laxatives, analgesics and vitamins come to be seen by beneficiaries as a right. They place pressure on physicians to have them "prescribed," often to the irritation of the prescriber and dispenser, and at increased cost to the taxpayer. Many of these items are so-called "convenience" or "comfort" products. It can be argued that the money spent by the plan on these items would better be spent for needed items, and that consumers should pay for personal care products out-of-pocket.

Prescribers face the dilemma of either treating a patient unfairly by "denying" treatment that is potentially available as a free benefit, and which the patient desires, or pleasing the patient by prescribing the items and feeling guilty for possibly abusing the plan.

A proposed solution is the exclusion of all over-the-counter medications as benefits. This option has a number of negative consequences, the most important being the exclusion from the ODB plan of several important drugs. There is also substantial risk that the prescriber, acting out of concern for the patient or under pressure to provide a prescription, will substitute an expensive prescription drug for a less costly, but equally effective, non-prescription medication. In this way, making over-the-counter drugs "not a benefit" could actually increase overall plan costs.

[29] Palo Stoller, Eleanor, "Prescribed and Over-the-Counter Medicine Use by the Ambulatory Elderly," *Medical Care*, 26:12 (1988) pp. 1149-1157.

A possible solution is to have these products under greater control by the dispenser. Recommendations and a discussion about this issue can be found in section 8.1. Many non-prescription medications (schedule C) are available in Ontario only with the consent of the pharmacist, and many others are available over-the-counter only in a pharmacy, and are theoretically under the indirect control of the pharmacist. This could provide a good opportunity for counselling by the pharmacist, although this now occurs all too rarely in practice. The Committee has recommended that pharmacists should exert more control over nonprescription medication, (recommendation 8.14) and that more information about the possible dangers of non-prescription medication use should be communicated to the consumer (recommendation 8.15.)

Another option is to establish a number of over-the-counter preparations as benefits, but to restrict the prescribing of them to specific indications. Balancing the benefit and harm of the possible solutions, the Committee has been convinced that prescription products should be dealt with in the same manner, whether the product can be sold without a prescription or not.

7.20 The Committee therefore recommends that the DQTC be asked to review all the over-the-counter preparations that are currently benefits of the Ontario Drug Benefit plan in the same way that it reviews other prescription products, and that the over-the-counter preparations which are to be listed in the formulary be allocated to either the general or restricted use category.

Chapter VIII
Dispensing/Administration

This section dealing with dispensing was the subject of the Inquiry's fourth interim report. It deals with the two main responsibilities of the pharmacist, which are the cognitive, patient-oriented activities, such as consulting, and the product-related ones of acquiring, storing, labelling, packaging, dispensing and record keeping. Important recommendations deal with the restructuring of current pharmacy training.

The role of nurses is examined in terms of "nurse friendly" medical acquisition systems in long term care institutions, patient counselling, participation in pharmacy and therapeutics committees and ongoing continuing education, and problem solving mechanisms in case of disputes over propriety of treatment. Recommendations address these issues.

Other discussions and recommendations take into consideration hospital pharmacies, home care and outpatient services, hospital pharmacy residency programs and investigational drug use for clinical trials. The role of home care and other health care workers is dealt with from the perspective of the needs of caregivers and in light of the services available.

8.1 The Role of the Pharmacist

It should be noted that the majority of section 8.1, on the role of the pharmacist, was originally published in the Pharmaceutical Inquiry of Ontario's fourth interim report.

8.1.1 Introduction

In discussing the dispensing of drugs, one of the major areas of our mandate, the Pharmaceutical Inquiry of Ontario determined that major changes were needed in the role of the profession of pharmacy. The contemplation of major changes in a professional role necessitated that we put forth certain ideas, and solicit responses to them, from the various pharmacy organizations. Therefore, on August 28, 1989, a discussion paper, which outlined positions on all points ultimately addressed by the recommendations contained in the interim report, was circulated. Requests for comments were limited to individuals and groups in the practise of pharmacy and, although time constraints were stringent, we received a gratifying number of well-thought out responses.

While most of the comments focused on the topics covered in the paper, several included additional recommendations. Among these were requests, by the Ontario Hospital Association (OHA) and the Ontario branch of the Canadian Society of Hospital Pharmacists, to support more hospital pharmacy residency programs and, by the Ontario Pharmacists' Association (OPA) to adopt a dynamic formulary.

In general, the responses to our discussion paper, combined with input received

throughout the proceedings of the Inquiry, resulted in the recommendations concerning the profession of pharmacy in Ontario which follow.

8.1.2 Overview

Pharmacists' responsibilities for safe and effective drug therapy encompass both cognitive, patient-oriented functions and those which are distributive or product-oriented. The latter functions include acquiring, storing, labelling, packaging, and dispensing medication, as well as related record keeping. Patient-oriented activities involve consulting with prescribers, patients, and other health care professionals to optimize drug therapy.

It is our observation that the drug distribution system in Ontario is accessible, safe and reasonably efficient. The services of a pharmacist in a community or hospital pharmacy are, with a few exceptions, available in Ontario communities. Consumers are able to obtain necessary products with minimal delay or inconvenience, and the physical act of delivering drugs into the hands of the public is, generally speaking, carried out in a satisfactory manner.

However, pharmacists are not meeting their full potential as members of the health care team whose objective it is to ensure optimum drug therapy. We believe that ways must be found for pharmacists to provide more comprehensive patient-oriented services, including maintenance of medication and drug allergy profiles, monitoring of drug therapy, patient counselling, public drug education, provision of drug services to home care patients, drug utilization review programs, health promotion, self-care consultation services (non-prescription drug counselling, health care aids), and drug information and consultation services to other health care professionals.

The current economics of community pharmacy practice have a negative impact on the provision of patient oriented services and, in our view, are not in the public interest. The payment system, which is structured to reimburse pharmacies on the basis of drugs dispensed rather than professional services rendered, acts as a disincentive to the provision of certain desirable services. We believe that economic, professional and educational strategies must be developed to reward delivery of patient-oriented service while maintaining the product dispensing function.

8.1.3 Factors Leading to Change

The practice of pharmacy is subject to a rapidly changing environment. Public expectations, more elderly patients, government and other third-party involvement in the payment for drugs, human resource issues, new drugs, advancing technologies, professional expectations, and competency must all be considered when examining ways to improve pharmacy services.

8.1.3.1. Public Expectations: The public expect accurately and efficiently dispensed prescription drugs. They expect prescription and non-prescription drugs, health care aids and health related items to be available conveniently, in a timely manner, and at reasonable prices.

Less easy to define, but nonetheless vital, is the public expectation for patient-oriented services. A better informed public, more sophisticated in terms of drug use and health, is demanding more information from physicians, nurses, pharmacists and others. They want to know the reasons behind a particular drug therapy. They ask about drug dosage, administration, contraindications and alternative therapies.

8.1.3.2. Patient Patterns—Demographics: While the birthrate is expected to level or decline slightly over the next decade, growth in the population aged 45 to 75 will accelerate, and older patients use more drugs. Immigration is leading to an increased need for labels and instructions in a variety of languages.

8.1.3.3. Cost Containment: It is generally recognized that if resources dedicated to the health care system continue to rise at the current rate there will be a very serious problem for our province. Expenditures for Ontario Drug Benefit (ODB) plan drug claims have increased from $67.7 million in fiscal year 1976-77 to $629.9 million in 1988-89,[1] and the number of eligible recipients, the number of approved drugs, utilization patterns, the dispensing fee level, and the cost of drug products in the formulary have increased significantly over this period. Along with those from government, there will be increased pressures from private insurance carriers and the public for cost containment measures.

8.1.3.4 Human Resources: The number of licensed pharmacists in Ontario has not been keeping pace with demand and both the community and hospital sectors have been reporting vacancies for several years. However, the human resource issue is complex and involves many factors in addition to a consideration of the simple demand situation, including the time spent by pharmacists on non-professional activities and the effective use of auxiliary personnel and technology. Other human resource related issues include the number of accredited pharmacies in relation to the need for pharmaceutical services in a particular community, the volume of prescriptions in these outlets, the expanded activities of pharmacists (unit dose dispensing systems, increased counselling) and the effects of the increasing number of female pharmacists.

The proper deployment of non-professional personnel, such as pharmacy assistants, requires careful consideration. While pharmacists retain final responsibility for the drug dispensed or sold, the use of auxiliary personnel in this process has become significant. Such personnel can relieve the pharmacist of many of the technical or repetitive operations inherent in the product-oriented part of practice, freeing time for more patient-oriented tasks.

8.1.3.5. New Drugs, Systems and Specialization: The development of new drugs and delivery systems will challenge pharmacists to continue to expand their knowledge in the areas of pharmacology, therapeutics and pharmaceutics. Growing fields of specialization—geriatrics, paediatrics, drug information, intravenous admixture, radiopharmacy, total parenteral nutrition—will also require new knowledge and the development of skills.

8.1.3.6. Technology: The advent of computers in pharmacy practice has had a significant positive effect on record keeping, preparation of labels, third-party billing and maintenance of patient medication histories, all functions which are now readily available in the computerized systems found in over 80 per cent of Ontario pharmacies. Drug interaction and information systems are developing very quickly, and these technological advances make pharmacists better equipped to dispense medication and provide appropriate analysis and intervention techniques. The advent of "smart cards" and centralized computer systems will further advance the capability of pharmacists to monitor drug therapy and intervene appropriately.

[1] Ontario Ministry of Health, Drug Benefit Utilization Summary Report, Service Data, 1976-77 and 1988-89.

Smart cards, which will concentrate an individual's drug history into a single record, represent a significant step forward. But they are, after all, simply a record. To benefit a patient in terms of choice of therapy, avoidance of untoward reactions, and proper drug utilization, there must be a reference to this record by the pharmacist and the prescriber (a physician or dentist) with subsequent interaction among the pharmacist, prescriber and patient. In the case of the two health care professionals, this may involve a centralized interactive computer system.

Original packaging dispensing, as commonly practised in Europe, introduces another dimension to pharmacy practice. This technology, coupled with computerized labelling and automated dispensing, could lead to a dramatic change in the activities of pharmacists away from the distributive function toward the cognitive one.

8.1.3.7. Professional Expectations: As pharmacy students become more highly trained in patient-oriented practice and clinical pharmacy, their expectations will shift from a product orientation to a more patient-oriented type of practice.

In addition, the expectations of other health care professionals will increase with respect to the contribution that pharmacists can make toward rational drug therapy.

8.1.3.8. Competence: While efforts will continue in the area of quality assurance in drug distribution, competence assurance is fast becoming an issue in terms of professional service and licensing requirements. In future, increasing emphasis on the cognitive aspects and on patient-oriented practice will lead to greater involvement in developing and monitoring drug therapies.

8.1.4 Issues and Recommendations

The issues identified in the following discussion are based on various product and patient-oriented responsibilities of pharmacists. The issues related to human resources and education overlap both patient and product responsibilities.

8.1.4.1 Product-Oriented Responsibilities: Product-oriented responsibilities of pharmacists relate to the evaluation and dispensing of prescriptions and sale of non-prescription drugs. The pharmacist interprets and evaluates prescriptions for correctness and completeness, verifies authenticity and appropriateness, and determines urgency. Prescription preparation involves the selection of the appropriate product and ensuring that it is dispensed in accordance with requirements of the prescriber, the needs of the patient, and legal considerations.

Auxiliary personnel (variously called pharmacy assistants, dispensary assistants, pharmacy technicians) are widely used to carry out certain functions related to the process. Generally speaking, they perform in a reasonable and effective manner, although there is room for improvement. There appears to be a certain amount of undesirable "role reversal" with some pharmacists carrying out physical acts of dispensing, while leaving assistants to deal with patients. Clearly, the assistant should concentrate on product-oriented tasks, freeing the pharmacist for patient counselling and similar professional functions.

8.1 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists clearly defines the respective roles of auxiliary personnel and pharmacists and ensures that assistants perform technical, product-oriented tasks while pharmacists concentrate on patient oriented tasks such as monitoring drug therapy and providing advice on drugs to

patients and other health care professionals. The strategies used to ensure this implementation should be associated with the promulgation of standards of practice and competence assurance.

While the respondents to our August 1989 discussion paper generally supported the establishment of standards for auxiliary personnel, the OHA made a recommendation to further study the issue. The OPA suggested that standards for training these individuals for positions in community pharmacies are not necessary.

Pharmacists can also maximize the effective use of professional time by the increased use of computers. Because computer use is tied closely to the billing procedures of the Ministry of Health (MOH), development of new programs often involves considerable input by the Ministry. It is vital that the time saved by the increased use of computers be utilized by pharmacists in a professionally-oriented fashion, such as patient consultation, and that aids to patient consultation contained within the computer programs be accessed by the pharmacist and not just by the assistant.

8.2 The Committee therefore recommends that, by the end of 1992, the Ministry of Health, the Ontario College of Pharmacists and the Ontario Pharmacists' Association jointly devise requirements for information management systems, and guidelines for their use, which will ensure optimal access to patient profiles, and adverse drug interaction programs. In addition, the Committee recommends that the Ontario College of Pharmacists establish practice guidelines to implement the optimal use of this type of information management system.

In Canada the majority of unit dosage form prescription drugs dispensed are transferred from a bulk container to child resistant packages for delivery to the patient. Original packaging dispensing, common in Europe, is emerging. This is due primarily to initiatives by brand name manufacturers and is likely to escalate. While this form of packaging has many advantages, it should not lead to uncertainty or confusion, be a hindrance to individualized treatment regimens, impede interchangeability of drug products, or be a marketing or promotional tool.

8.3 The Committee therefore recommends that, by the end of 1990, standards be established for pharmaceuticals introduced in what is known as "dispensing size" or "original pack" packages. The standards should ensure that no original package dispensed should create uncertainty or confusion, be a hindrance to individualized treatment regimens, impede interchangeability of drug products (for purposes of interchangeability, physical characteristics of packages should not be regarded as unique) or be a marketing or promotional tool (promotion to the public of a particular brand should not be a feature of design or labelling.) In addition, the packages should be required to meet child resistant standards.

8.4 The Committee further recommends that the Ministry of Health, in consultation with appropriate interested organizations, promptly undertake discussions with the Health Protection Branch of Health and Welfare Canada to establish these standards.

At present, the majority of patients view pharmaceutical services primarily as product-oriented. The emphasis is on the essentials of the dispensing function: the correct drug, in the proper strength, dosage form and quantity, along with instructions for use. However, the patient may not be aware of special instructions for taking the drug properly, contraindications, or other precautions, and may not comprehend or be able to read the instructions. It is in this area

of communicating with the patient that improvements can be made. For the ambulatory patient, these improvements can take the form of better designed labels, use of auxiliary labels, use of printed inserts, and verbal reinforcement, which is especially important when a patient receives a particular prescription for the first time.

8.5 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists establish a working group for the express purpose of expanding the practise of providing auxiliary labels and other printed information on prescription drugs, along with verbal reinforcement to the patient by the pharmacist. The working group should include consumer representation.

Various patient groups have special communication needs. With respect to visually handicapped individuals, we are aware of programs that have been developed and feel that these programs should be encouraged.

8.6 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists encourage the profession to pay particular attention to the needs of visually handicapped patients by using large type, and appropriate inserts and graphics whenever possible, in the preparation of prescription labelling.

Other patient groups with special communication needs are those whose language is not English or French.

8.7 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists encourage the use of labels and other directions in the language familiar to the patient, with the pharmacist providing appropriate verbal reinforcement.

8.1.4.2 Patient-Oriented Responsibilities: Patient-oriented responsibilities include monitoring drug therapy, counselling patients and providing drug information to other health care professionals and the public.

Pharmacists have been regarded as a "second line of defence" in drug therapy. Ideally, the pharmacist maintains a complete patient medication profile. When a prescription is received, the pharmacist assesses prescribed medication in the light of the profile and other factors, contacts the prescriber if necessary, and monitors compliance. In addition, a pharmacist is in the best position to review the non-prescription drug use of patients.

Monitoring drug therapy involves knowing what drugs the patient uses and intervening when appropriate. Factors to be considered include: potential allergies, sensitivities or side effects; potential for certain indications; possible interactions of drugs with other prescribed drugs, non-prescription drugs, foods, and diseases; possible drug duplication, multiple prescribing, excessive use and drug abuse; degree of compliance with prescriber regimen; effectiveness of drug therapy; and adverse drug reactions. There remains the vital requirement of increased communication among the patient, nurse, prescriber and pharmacist. In order to improve just one of these communication links, and to increase the application of patient profiles, the pharmacist/patient relationship needs to be regularised as much as possible.

8.8 The Committee therefore recommends that, by the end of 1990, the Ministry of Health conduct an education campaign, directed primarily at seniors, recommending that patients select a pharmacy and, in so far as this is practical, obtain all pharmacy services there.

In order to monitor effectively, the pharmacist must possess information on the complete drug regimen of the patient, including both

prescribed and non-prescription medication. The vast majority of Ontario pharmacies already maintain patient medication profiles on a voluntary basis.

8.9 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists enforce this voluntary trend through regulations requiring all pharmacies to maintain patient medication profiles in compliance with defined content standards.

General support for this recommendation was expressed in response to the August, 1989 discussion paper, although the OPA preferred to see the requirement encouraged rather than mandated.

In addition to patient medication profiles maintained by pharmacists, there has been significant development in the use of portable patient drug profile records. If properly maintained, these records will assist in providing more complete information to pharmacists on drug therapy for particular patients.

8.10 The Committee therefore recommends that the Ontario College of Pharmacists, the Ontario Pharmacists' Association, the Ministry of Health and other interested parties diligently pursue the development of portable patient medication records such as the "smart card."

While the portable patient medication record is a useful tool for drug therapy monitoring, we regard this only as an interim step. In order to realize the full potential of the pharmacist as a participant in the patient's drug therapy, a more interactive and consistent form of communication between the patient, pharmacist and prescriber is indicated. In order for pharmacists to maximize their role in patient and prescriber consultation, pharmacists must have access to the complete drug regimen of the patient, and know the condition(s) being treated.

8.11 The Committee therefore recommends that, by the end of 1990, the Ontario Medical Association, the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons of Ontario, the Ontario Pharmacists' Association, and the Ontario College of Pharmacists devise guidelines to ensure that the pharmacist, when clinically appropriate and with the agreement of the patient, has access to the patient's diagnosis(es.)

After determining the level of communication appropriate for each patient, pharmacists provide the necessary verbal, written and pictorial information in an effort to optimise drug use. Information on indications, dosage frequency, directions, storage, appropriate action for misdoses, signs and symptoms of therapeutic response (or failure), compliance, advice on aids for compliance, as well as the potential for interactions, is provided. From a purely practical point of view, the pharmacist also discusses with the patient the refill directions of the prescriber and the necessity for checking back with the prescriber for a further supply of medication.

These functions are included in the professional services provided by pharmacists; they should be prompted by ethical and practice standards, not by law. The pharmacist is reasonably well trained to perform these functions (although improvements can be made) and the extent to which such counselling is done needs to be increased. Members of the public are not always fully aware of these services, and for this and other reasons, such as lack of interest, time, shyness, desire for privacy, language or other communication barriers, often do not request the optimum level of service. We are convinced that a more informed public, asking questions about medication, will result in an increase in the provision of these services by pharmacists.

A public education program, focusing on the services that patients can expect to receive from pharmacists, will create heightened awareness of the importance of proper drug use, and improved compliance with drug regimens.

8.12 The Committee therefore recommends that, by the end of 1990, the Ministry of Health, in co-operation with appropriate interested organizations such as the Ontario Pharmacists' Association and the Ontario College of Pharmacists, launch a campaign to make the public more aware of the services that can be expected of a pharmacist, with emphasis on those related to the provision of information on the proper use of medications.

One of the barriers to effective communication between pharmacists and the public when prescriptions are presented, or non-prescription drugs sold, is the physical lay-out of pharmacies. We believe that pharmacies should have an area permitting reasonably private discussion between patient and pharmacist.

8.13 The Committee therefore recommends that the Ontario College of Pharmacists require all pharmacies in Ontario, by the end of 1991, to have an appropriate consultation area where patients can discuss their medication with a pharmacist, in privacy and relative comfort.

8.14 The Committee also recommends that pharmacists exercise more personal control over the sale of non-prescription drugs and that, by the end of 1991, the Ontario College of Pharmacists require all pharmacies in Ontario to have a professional products area, adjacent to or contiguous with the dispensary, where all non-prescription drugs—with the exception of Schedule "C" drugs which must not be available for self-selection—must be located.

This recommendation was also generally supported by the respondents to the discussion paper, although the OPA again stated that it preferred to encourage rather than mandate this development.

The drugs in this contiguous area would be under more vigorous supervision by the pharmacist than the non-drug products available generally in the front shop. In order to further assist the pharmacist to exercise the control suggested in the previous recommendation, steps should be taken to alert the public to the importance of consulting a pharmacist regarding the use of non-prescription drugs, particularly when these are taken concurrently with prescription drugs.

8.15 The Committee therefore recommends that, by the end of 1991, the Ontario College of Pharmacists require the use of signs and printed material within the pharmacy to alert the public to the importance of consulting a pharmacist regarding the use of non-prescription drugs, especially when these are taken concurrently with prescription drugs.

Pharmacists in community practice derive their professional income directly (owners) or indirectly (employees) from the sale of prescription and non-prescription drugs. While it is true that professional services can be (and are) reimbursed by way of professional fees, and a mark-up on drug products, it is obvious that income is maximized by increased sales of both categories of drugs. Mechanisms should be investigated which would reward the provider of professional pharmaceutical services, whether or not a drug is sold or dispensed.

Proposals for innovations in the method of reimbursement for pharmacy services, perhaps involving pilot projects or other experimental approaches, need to be tested and developed. Alternative remuneration

systems for providing professional services would not be linked directly to the sale of a drug. One objective of such an endeavour would be to heighten awareness among other health care professionals and members of the public of the scope and value of pharmacy services.

8.16 The Committee therefore recommends that, by the end of 1991, the Ministry of Health, in cooperation with the Ontario Pharmacists' Association, establish pilot projects to examine and assess alternative reimbursement and payment mechanisms which would reward the provider of professional pharmaceutical services and be independent of the sale or dispensing of a drug.

One such mechanism is fee for service on a per capita basis in an environment such as a nursing home, home for the aged or comprehensive health organization. Another example is the payment of a fee when the pharmacist, upon receipt of a prescription and with the agreement of the prescriber, either changes a drug therapy, or eliminates the drug entirely.

Prescriptions in Ontario are paid directly by the public, by the ODB plan, or by a third-party insurance plan. If patient-oriented services are to be encouraged, a form of reimbursement needs to be identified and the services themselves must be visible and obvious to the public.

Optimum patient care includes continuity of care, and requires complete knowledge of a patient's medications by both the hospital and community pharmacist, as well as communication between these parties.

8.17 The Committee therefore recommends that, by the end of 1992, the Ministry of Health, in conjunction with the Ontario Pharmacists' Association, the Ontario College of Pharmacists and the Ontario Hospital Association, create a linkage between patient medication files in community and hospital pharmacies and ensure that pre-hospitalization or discharge consultations stress the importance to the patient of such an exchange of information.

While the ultimate goal of both community and hospital pharmacy practice is optimal drug therapy for the patient, the differences in practice environment and payment mechanisms between pharmacists operating in one or the other milieu must be recognized. For example, pharmacists in hospital practice have more opportunities than their community based colleagues to become involved in certain activities, such as pharmacotherapy consultation and therapeutic intervention programs. All pharmacists, whether hospital or community based, should be encouraged to become involved in these types of professional activities to the extent possible.

The trend to increasing use of formularies should be encouraged and the potential contribution from the clinical expertise of pharmacists must be more fully utilized. Studies of pharmacy programs providing pharmacotherapy consultation, drug therapy monitoring, and subsequent intervention when necessary, have been examined in the institutional setting and have proven effective in improving quality of care and reducing cost.

8.18 The Committee therefore recommends that the Ministry of Health, in conjunction with the Ontario Hospital Association, the Ontario Medical Association, the Ontario Pharmacists' Association, the Canadian Society of Hospital Pharmacists (Ontario branch), and the Ontario College of Pharmacists immediately encourage the expansion of the clinical role of pharmacists in the increased use of formularies, pharmacotherapy consultation, drug therapy monitoring and subsequent intervention when necessary.

The pharmacologic consulting role of the pharmacist in monitoring the use of potentially toxic drugs through the evaluation of response and drug concentrations and end-organ effects is recognized and should be expanded. While there are practical limitations, the potential for expansion into community practice sites should be explored.

Therapeutic intervention programs are those initiated by a pharmacist to effect a change in a patient's drug therapy. An intervention is accepted by a prescriber if it results in a change to the drug order or prescription in question. Drug therapy monitoring and subsequent intervention when necessary is an essential component of pharmacy services and should be encouraged both in hospital and community practice. The Committee is convinced that the increasing use of formularies, pharmacotherapy consultation, drug therapy monitoring, and subsequent intervention when necessary, can and should be an essential component of pharmacy services in community and hospital practice, nursing homes, homes for the aged and other institutions.

8.19 The Committee therefore recommends that, by the end of 1992, the ministries of Health and Community and Social Services, in cooperation with the Ontario Medical Association, the Ontario Nursing Home Association, the Ontario Association of Non-Profit Homes and Services for Seniors, the Ontario Pharmacists' Association and the Ontario College of Pharmacists, set up pilot projects which involve community drug therapy committees based on models existing in institutional settings.

To provide direct input into the prescribing practices of physicians and other prescribers, pharmacists must have ready access to drug information. This will also allow them to deal with questions and problems at the patient level, assist with the development of drug formularies, and become generally more knowledgeable. Pharmacists currently have access to a variety of sources of information, including the traditional textbooks, journals, and other sources such as tapes, videos, and seminars, as well as to several drug information services. One such service is operated by the Ontario College of Pharmacists and is located at the faculty of pharmacy, University of Toronto; others are located in hospitals. These are useful services which could be expanded and co-ordinated for better utilization of expertise.

8.20 The Committee therefore recommends that, by the end of 1990, the Ministry of Health and the Ontario College of Pharmacists ensure that drug information programs are encouraged, supported, coordinated and expanded to other professionals.

8.1.4.3 Human Resources and Education: To achieve the desired level of pharmaceutical services, there must be an adequate supply of properly educated personnel. For this reason, we believe that human resource and education issues touch on the product-and patient-oriented aspect of pharmacists' responsibilities dealt with in the previous discussion.

Some human resource related issues have been discussed earlier. This section examines "demand" versus "need" for pharmacists and makes recommendations regarding the training of pharmacists.

During the period 1981 to 1988 there was a 19.5 per cent increase in the number of community pharmacies in Ontario (from 1,737 to 2,076). It should be noted that there has also been an increase in prescription volume during this period. The number of pharmacists licensed to practice in our province during the period 1981 to 1988 rose by 23.9 per cent (from 5,815 to 7,206). Graduates from the faculty of pharmacy, at the University of Toronto (the only pharmacy faculty in Ontario) accounted for

approximately 65 per cent of the newly licensed pharmacists in 1981. In 1988, this figure had dropped to 42 per cent. The rest of Canada accounted for 16 per cent of the new licensees in 1981, and 24 per cent in 1988, with other countries contributing 19 per cent in 1981 and 34 per cent in 1988. The number graduating from the University of Toronto has remained relatively constant during this period with those coming from other jurisdictions gradually increasing. (see table 8.1)

Table 8.1

Sources of Pharmacists
Ontario 1981 to 1988

Year	U of T	Other provinces	Other countries
1981	65%	16%	19%
1985	51%	21%	28%
1986	43%	23%	34%
1988	42%	24%	34%

Source: Ontario College of Pharmacists

It appears that the situation existing for many years in some provinces, where the numbers graduated exceeded opportunities for practice, has now changed. The number of pharmacists coming to Ontario from other provinces has levelled off in the past two years while those from other countries has increased.

There is vigorous competition between those seeking to employ pharmacists for community and hospital practice and among employers within these sectors. Metropolitan and larger urban centres are more attractive to a majority of pharmacists seeking employment than are rural or more remote communities. It has been argued that the larger centres are overserviced with pharmacies in some cases while some small or remote communities may have no pharmacy, or the local pharmacy may be experiencing professional staff shortages.

There is undoubtedly a continuing demand for pharmacists in Ontario. What is imponderable is the actual need. The Inquiry is not aware of research or data that has determined need for pharmacists on the basis of any measurable factor such as optimum number of pharmacists per capita, number of prescriptions dispensed, or any other variable.

Resolution of the demand versus the need for pharmacists issue will not be possible unless controls are placed on demand, since it seems unlikely (and indeed perhaps not desirable) in our system to limit the number of pharmacies. We must attempt to meet demand for pharmacists as realistically as possible.

What is clear to the Inquiry is that at present, Ontario suffers from a shortage of pharmacists with an adequate clinical orientation. It is our opinion that this shortage can best be addressed through training additional pharmacists within our own province. This training should be based on educational goals and objectives that have been derived from a careful consideration of the enhanced clinical orientation of the pharmacists as recommended elsewhere in this report.

The faculty of pharmacy at the University of Toronto is overcrowded and understaffed. As mentioned above, it now contributes fewer than 50 per cent of the pharmacists licensed each year in Ontario, despite an enrolment which exceeds, by approximately 30 per cent, that for which it was designed.

8.21 The Committee therefore recommends that, by the 1992 academic year, or the year a new faculty of pharmacy starts operations (see recommendation 8.22), the faculty of pharmacy, University of Toronto, reduce its enrolment to the level for which it was designed.

The Committee strongly supports the establishment of a second Ontario faculty of pharmacy. The Committee is persuaded that

the study of pharmacy is best undertaken in association with the facilities of a medical school and, mindful of needs and opportunities for education in northern Ontario, supports the establishment of a second faculty of pharmacy at a northern Ontario university, provided a health science program that includes a faculty of medicine is established there. If this is not likely during the next three years, a second faculty of pharmacy should be established at an Ontario university that already has a faculty of medicine.

8.22 The Committee therefore recommends that, by the 1992 academic year, the Ministry of Colleges and Universities establish a second faculty of pharmacy in Ontario, with an enrolment approximating the reduced level of the Toronto faculty. This should be a five year program similar to that recommended for the University of Toronto (see recommendation 8.23), established at an Ontario university that has a health sciences program which includes medicine. The decision to establish this faculty should take into consideration the need for such services in northern Ontario, but the Committee believes the advantages of having faculties of both medicine and pharmacy at the same location outweigh geographic concerns.

While the Committee acknowledges that the undergraduate program is becoming more clinically oriented, there is room for improvement and the trend towards increased emphasis on training for patient-oriented practice (communications, patient counselling, therapeutics, drug information, pathophysiology and geriatrics) should be encouraged. There is also a need for a more effective reinforcement, in a practical setting, of the undergraduate course material and for establishment of patient-oriented role models for students.

8.23 The Committee therefore recommends that, by the 1991 academic year, the University of Toronto embark on a five year undergraduate pharmacy program to permit more structured practical training and increased instruction in communications, patient counselling, therapeutics, drug information, pathophysiology and geriatrics.

Practical training for licensure in Ontario is conducted in community and hospital pharmacies under a semi-structured system. Few requirements are made, either by preceptors or the training environment. While this system provides pharmacy students with summer jobs and practical experience, it has definite shortcomings from an educational perspective.

8.24 The Committee therefore recommends that the practical training program for pharmacy students and interns be structured and form part of the five year program recommended above (see recommendation 8.23.)

More pharmacists with a doctor of pharmacy degree are needed to assume teaching, research, practice and leadership roles. At present, students wishing to pursue this degree program must do so in the U.S. or Europe and the costs make this inequitable.

8.25 The Committee therefore recommends to the Ministry of Colleges and Universities that, within the next two years, a doctor of pharmacy program be established at an appropriate faculty of pharmacy at an Ontario university.

Prescribers need a greater understanding of the contributions that can be made by pharmacists. At the undergraduate or immediate post graduate level, there should be a collaborative effort between the faculties of medicine and pharmacy to jointly instruct students through undergraduate courses and internship programs. Areas such as choice of drug therapy, monitoring techniques and

patient counselling would be covered. The purpose would not be to train both groups to do the same thing, but to instill the notion of the unique, but collaborative, contribution each can make to the patient's drug therapy.

8.26 The Committee therefore recommends that, by the 1991 academic year, the faculties of medicine and pharmacy at the University of Toronto jointly instruct students in patient-oriented services, including choice of drug therapy, monitoring techniques and patient counselling. This recommendation is also directed to the Ministry of Colleges and Universities and the Council of Ontario Faculties of Medicine as a requirement for the establishment of an additional faculty of pharmacy.

There are serious professional human resource deficiencies in some rural communities, and especially in northern Ontario where the shortage of pharmacists, as well as other professionals, threatens the provision of optimal health services, including rational drug therapy.

A promising strategy to address this problem is to train undergraduate and post-graduate students in communities removed from the large southern Ontario centres. Accordingly, the committee favours the establishment, or expansion where they already exist, of training posts in rural or northern Ontario.

8.27 The Committee therefore recommends that the Ministry of Colleges and Universities reach an early decision regarding the planning of such a health science centre in northern Ontario.

The growing fields of specialization such as geriatrics, paediatrics, drug information, intravenous admixture, radiopharmacy and total parenteral nutrition will also require the development of new knowledge and skills.

8.28 The Committee therefore recommends that, by the end of 1991, the faculty of pharmacy, University of Toronto, review its curriculum with a view to increasing the emphasis in communications, patient counselling, therapeutics, drug information, pathophysiology and geriatrics. At the same time, the Ontario College of Pharmacists should review its requirements for continuing education to include courses in pharmacology related to geriatrics and paediatrics, as well as courses in drug information, intravenous admixture, radiopharmacy and total parenteral nutrition.

In the earlier section on product-related responsibilities, reference was made to the need for a public education program to create heightened awareness of the importance of proper drug use. A corollary to that deals with the need to train medical personnel to communicate effectively with patients on that topic.

8.29 The Committee therefore recommends that, by the 1991 academic year, the University of Toronto and the Council of Ontario Universities' Health Science Faculties ensure that training for medical, nursing and pharmacy students include appropriate emphasis on the need to communicate to the patient the importance of proper drug use.

8.2 Role of the Nurse

8.2.1 Use of Human Resources

Optimal use of all human resources is clearly desirable, and this is especially so in areas where there are shortages. Human resources must also be considered within a larger context encompassing all the relevant disciplines, because system changes for one profession inevitably affect the others. Medication

acquisition systems in long term care institutions must clearly be "nurse friendly" and must not needlessly take up nursing time.

Within this framework, the unit dose system of dispensing (see recommendation 6.8) has many advantages, including great savings in nursing time and efficiency. Because much of the work can be done by pharmacy assistants, it makes sense to spend extra money on a carded bubble package or unit dose system. The institutions gain in terms of the nursing time saved, and the extra overall cost is small. The Committee believes that similar efficiencies can be realized in other areas.

8.30 The Committee therefore recommends that, by 1991, the Ministry of Health, together with the Ontario Hospital Association, the Ontario Association of Non Profit Homes and Services for Seniors and the Ontario Nursing Home Association, review and improve as necessary, medication acquisition, storage, dispensing and administration systems in long term care institutions.

8.2.2 Counselling

Although responsibility for administering medication in hospitals and institutions usually falls to the nurse, it is currently unclear to what extent nurses should be counselling clients with respect to medication. Lack of compliance to medication regimens has been well documented. This can lead to lack of resolution of the diagnosed condition and possibly deterioration—results which can cause increased stress to the patient as well as the system.

Of all health care providers, nurses frequently have the most regular contact with the patient, allowing them the greatest influence on patient compliance. Nurses in institutions, clinics, physicians' offices and community health could be directed to be more proactive in educating patients with respect to medication regimens, and means of compliance. In addition, in the compliance-enhancing role, the extent to which nurses should be advocates for patients is unclear. Standards and policy should be developed to clarify the extent to which nurses should act as advocates with respect to problems such as discussion of adverse effects, side effects and alternatives to drug therapy.

8.31 The Committee therefore recommends that an interdisciplinary committee of the College of Nurses of Ontario, College of Physicians and Surgeons of Ontario and the Ontario College of Pharmacists should be established to determine the appropriate role of the nursing profession in patient counselling.

Due to their close contact with patients, nurses are not only in a unique position to improve compliance but also to view the effects and adverse effects of the medications and provide valuable information for various committees reviewing the effects of drugs.

8.32 The Committee therefore recommends nursing participation in drug utilization review, pharmacy and therapeutics committees.

8.2.3 Education

Following these objectives, educational bodies should establish curricula to reflect these decisions. A "Choice of Medications—1990" publication, the *Compendium of Pharmaceutical Specialties*, and drug information leaflets will help, but specific continuing education directed at this responsibility is probably needed. Clearly it is important to convey the message that ongoing educational opportunities must be made available for nurses.

8.33 The Committee therefore recommends that:

a) There be more continuing education for nurses regarding optimal pharmacotherapy; and

b) The College of Nurses of Ontario be asked to re-examine the nursing curriculum to ensure that a sufficient knowledge of basic therapeutics is included to allow meaningful postgraduate study and experience to make the nurse an effective treatment counsellor.

Particularly in the current human resource shortage situation in the nursing profession, there may often be a lack of time during scheduled shifts to participate in continuing education. Health care professionals accept the responsibility of keeping up to date; it is a part of being a professional. However, it can be very difficult for those on salary to maintain competence and expand their knowledge base. Employers should recognize these problems and budget to allow adequate participation and ongoing education. In practice, the employer of the majority of health care professionals in Ontario, directly or indirectly, is now the government. Increased support for post graduate education about pharmacotherapy could well be a "good buy" for the province, both in terms of improved treatment for citizens and by promoting rational pharmacotherapy, which may well save money.

8.34 The Committee therefore recommends that:

a) The College of Nurses of Ontario clarify and establish standards for basic and continuing education about pharmacotherapy; and

b) The Ministry of Health budget sufficient funds to its health care organizations to allow them to fund nurses' participation in ongoing education (i.e. paying the cost of education.)

Nurses should expect to spend some unpaid time on these endeavors, but health care budgets should be sufficient to remunerate nurses for the acquisition of at least part of this necessary knowledge base. (i.e. paying nurses to be further educated.) Government/nurse negotiations should clarify this issue.

Nurses should be one of the professional groups toward which the drug information program is directed, as recommended earlier.

8.2.4 Institutions

In accredited hospitals, a mechanism always exists for dealing with physician/pharmacist/nurse disagreements about pharmacotherapy. Most such problems are dealt with in the ordinary discussions that are part of the proper teamwork so essential in modern therapeutics. However, the very existence of a formal dispute settling mechanism may well minimize the need for implementing it. It is important that nurses should always have access to a line of appeal if asked to participate in treatment they do not believe to be in the patient's best interest.

Problems arise when a medication is prescribed that is contraindicated under certain circumstances, which in the opinion of the nurse, seem to apply to the patient in question. Of course most contraindications are relative and it may be that the prescriber considers the balance of risk favourable and has failed to adequately communicate that line of reasoning to the nurse expected to administer the medication. Sometimes, however, the prescriber is not aware of the contraindication and communication from the nurse is in the patient's best interest. There seems no doubt that nurses should not administer a medication which, they believe, will do more harm than good. Both support from superiors and a suitable problem solving procedure must be available to any nurse administering medication.

We believe that such mechanisms may not always be available at present.

The pharmacotherapy knowledge base required by a health care professional may vary tremendously but basic principles are clearly important to all. The role of nurses as treatment counsellors seems likely to steadily increase in many areas (eg. mental health, diabetes and intensive care.)

8.35 The Committee therefore recommends that any organization employing a nurse who administers medication should ensure that a suitable problem-solving mechanism is available in case of dispute over the propriety of treatment.

The discharge of patients from institutions to continue treatment at home is always important. Proper patient care, as well as conservation of health care resources, demands that proper patient education occur prior to and during the discharge process. Without such education, compliance can be expected to be less, treatment failure may occur, and expensive readmission may follow. The nurse is often especially well placed to make sure that a medication list is prepared, appropriate follow up is arranged and the patient and/or relatives understand what is advised. The prescriber's role remains pivotal and in some cases a pharmacist may perform this service. But overall, at present and for the foreseeable future in Ontario, it will be nurses who implement discharge procedures.

8.36 The Committee therefore recommends that, in all health care institutions in Ontario, mechanisms be put in place to ensure appropriate patient education regarding treatment plans prior to discharge. Adequate time must be budgeted to allow for this and if it is to be done by nurses then adequate resources must be available to assure the nurse appropriate and ongoing education about pharmacotherapy issues.

8.3 Hospital Pharmacy

The description of the manner in which dispensing is carried out at the hospital level is taken mainly from information provided by the OHA in its submissions to the Inquiry.[2] Initially, the dispensing function includes review of the medication order. Other considerations are the appropriateness of the chemical entity, the required dosage, strength, frequency and route, and duration of administration. The expertise of the pharmacist is called upon to assess these elements of the medication order in the light of what is known about medications and about the patient, the diagnosis, other medications, allergies and previous therapies. Evidently, not all hospital pharmacists have access to patient profiles. As the requirement for maintenance of patient profiles in community settings has been recognized, it is equally necessary for patient care in the hospital environment.

8.37 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists, the Ontario Branch of the Canadian Society of Hospital Pharmacists and the Ontario Hospital Association take steps to ensure that all hospital pharmacies require patient medication profiles in compliance with defined content standards.

One of the major pharmacy controls for drugs in hospitals is the hospital formulary concept, which was discussed in section 7.3. Medication orders for non-formulary products will only be filled (because they are not normally stocked) and dispensed if the prescriber

[2] Briefs #57 X100 and 57B X100.

complies with the institution's requirements for non-formulary products. Automatic stop orders for certain classes of drugs also add prescribing controls; in order for a drug to continue past a certain number of days or repeats, the physician must personally review and renew the order. In addition, under defined circumstances, pharmacy departments should be able to automatically change the frequency and dosage of certain medication orders to comply with recognized standards.

8.3.1 Out-patient Services

A number of problems associated with the provision of services to out-patients in hospitals have been drawn to the attention of the Inquiry. These include the professional fee paid to the hospital under the ODB plan, high-cost new drug programs and investigational drug use for clinical trials.

Several Ontario hospitals dispense prescriptions to out-patients; in the case of drug benefit recipients, they are reimbursed at half the professional fee currently allowed for community pharmacies. Issues surrounding this question include drug acquisition costs for hospital out-patient dispensaries and funding for staff, facilities and other resources.

8.38 The Committee therefore recommends that the Ministry of Health and the Ontario Hospital Association review the rationale behind the reimbursement policy for Ontario Drug Benefit prescriptions dispensed for hospital outpatients.

Various high cost drug programs are currently being operated through hospitals. These include drugs for cystic fibrosis, thalassaemia and AIDS patients (AZT and pentamidine). It has been drawn to the attention of the Inquiry that the approach taken by the Ministry of Health to the funding of these programs may have the effect of compromising patient care services.

8.39 The Committee therefore recommends that by 1991, the Ministry of Health, in cooperation with the Ontario Hospital Association, establish mechanisms to adequately compensate hospitals providing professional pharmacy services to out-patients.

8.3.2 Home Care Services

The Inquiry supports efforts to reduce the length of hospital stay for patients where clinically appropriate. One way this can be done is through the establishment of programs which permit drugs otherwise administered in institutions to be administered in the home. While we are aware that such programs are available now, we feel they should be encouraged and expanded through specific incentive programs.

8.40 The Committee therefore recommends that total parenteral nutrition, intravenous antibiotic, analgesic and other home care drug programs be enhanced and expanded through an incentive reimbursement program to be negotiated by 1991 by the Ministry of Health, the Ontario Hospital Association, the Ontario Pharmacists' Association and other interested parties.

8.3.3 Hospital Pharmacy Residency Programs

One-year post-graduate pharmacy residency programs affiliated with the University of Toronto provide additional training in hospital pharmacy practice. It has been drawn to the attention of the Inquiry that attracting candidates for these programs is becoming more difficult due to the limited stipend. In view of the need for more hospital pharmacists with advanced training and experience in clinical practice, we support the enhancement and expansion of these programs.

8.41 The Committee therefore recommends that by 1991 the Ministry of Health, or other appropriate granting agency, provide the necessary funding to increase both the stipend paid to hospital pharmacy residents and the number of positions available for such residents.

8.3.4 Investigational Drug Use for Clinical Trials

It has been drawn to the attention of the Inquiry that hospitals which do not have established procedures for the initiation of a clinical drug trial may be absorbing costs not directly associated with patient care. Furthermore, if the pharmacy and therapeutics committee of the hospital does not have procedures to evaluate and authorize acceptance of the protocols for clinical drug trials prior to administration, the hospital does not have control of drug use in the patient population.

8.42 The Committee therefore recommends that by 1991 the Ontario Hospital Association, the Ontario Medical Association, the Ministry of Health and the Ontario branch of the Canadian Society of Hospital Pharmacists review the mechanisms for control of investigational drug use for clinical trials in hospitals with a view toward the establishment of standards and ethically appropriate methods of cost containment.

8.4 Role of Home Care and Other Health Care Workers

The focus of the role of home care workers, occupational therapists and other health care workers in the community is maintaining the person in the home. An important aspect is in the area of compliance monitoring of patients. The need for these services generally arises after the diagnosis has been made, and the prescription written by the physician, and after the prescription has been filled by the pharmacist and delivered to the patient.

Some individuals, functioning well in other areas, need the drug therapy to be administered in order to ensure compliance. This may be because of handicaps, or just because administration is physically difficult. For example some products, such as insulin, must be administered by injection.

8.4.1 Needs of Caregivers

If the patient requires compliance monitoring beyond that which is normally given by the physician or pharmacist at the time of delivery of the prescription, the individual who performs the monitoring as part of the caregiving function must have several things: the legal ability to perform the function (with respect to liability for errors made in carrying out familial or professional duties); the degree of education required to administer and monitor medication; and the ability to physically perform the task, using mechanical or other aids.

Persons who monitor the administration and compliance of medication regimens are often not professional health care workers. Very often this type of function is performed by family members, and it is only when the family member becomes unable or unwilling to perform this function that a professional health care worker is called in. In some situations, this role may be performed by close friends.

Legal liability for the administration of medications by a family member is less of a concern. But in the case of professional or paid health care workers, potential liability may be a major obstacle to the fulfilment of a needed function. The individual or group called upon to perform a function which may carry serious consequences for errors will

understandably be reluctant to perform such functions. Therefore, the individual or group must have protection, either in the form of legislative limitation of liability or affordable insurance.

8.43 The Committee therefore recommends that a statutory limitation of liability for administration of medications should be established, in order to relieve associations, and individuals working for such associations under delineated conditions, from liability for administering or monitoring medication in residential settings.

In addition, the functions to be performed must be well understood by the persons who administer medications and who must also possess the required communication skills to monitor compliance.

8.44 The Committee therefore recommends that courses in the skills required by health care workers to administer medication and monitor patient compliance in residential settings should be developed and made available through public health care programs.

8.4.2 Services Available

In Ontario, many home support services—both government funded and private—are already in place. Furthermore there are outpatient services attached to institutions; there are community centres; and there are volunteer groups with interests in specific disease entities. Although none of these have been structured to deal specifically with medications, it is possible they can be utilized to oversee and/or encourage drug compliance.

Home care, a government funded support system created to maintain persons in the community, utilizes paramedical personnel and homemakers in its programs. The nurse on the program is designated to teach medication regimens. She/he may fill medication devices and counsel the patient and/or family in the proper use of the drugs.

It is expected that in general the patient or a family member will be taught the medication regimen. However, many people in community programs suffer from varying degrees of forgetfulness and may have no family members nearby. If it is felt that the individual is non-compliant, the services of home care can be withdrawn on the premise that it would sustain a hazardous home situation.

Rather than force institutionalization by withdrawing services, it might be fruitful to consider developing surrogate family members. Homemakers attached to the home care program could be taught how to help a person remember to take medications. There is no suggestion here of administering the drugs; it would be merely to remind the person of the need to take the medication.

In subsidized housing, such as seniors' apartments or Ontario housing, there must be many people who would be willing and able to act as 'reminders' to a forgetful neighbour, especially if a stipend were attached to the service. There would have to be a person designated to be available for consultation, much of which could be done by telephone. This individual could be attached to the home care program, the public health department, a community medical clinic, or any other setting which staffs professionals with a medical background. A surrogate family member would not only be able to help the patient with his or her drug regimen, but would also recognize and respond to an adverse drug reaction. For the neighbours, such a program could provide the means of augmenting income, while providing the opportunity of a positive interaction with another person. Funders of the health care system could realize a reduction of costs for

professional visits and a possible reduction in the rate of institutionalization, be it acute hospitalization or long term care.

Community Occupational Therapy Association (COTA), funded by government, is another viable resource. The forte of the occupational therapists is their knowledge and creativity in devising ways and means to maintain a person functioning independently. This knowledge base is available to organize medical routines. Over and above knowing the usual compliance aids on the market, they can evaluate the ability of the person to use the device and, should this be a problem, either adapt it or create another method, such as using egg cartons, for organizing drugs. The occupational therapists depend not only on teaching methods but also upon establishing a relationship with their patients and patients' families to gain cooperation. They may visit the home as often and as long as they feel their services are beneficial.

COTA has also trained, and supervises, a corps of 400 volunteers who can be utilized to reinforce developed programs, freeing the occupational therapist to visit new patients.

8.43 The Committee therefore recommends that programs which provide for drug therapy compliance monitoring and drug administration and reminders should be encouraged and funded in community and public health programs.

Community assessment teams, day hospitals and day care centres are being developed in an attempt to prevent hospitalization and institutionalization and as a possible means to shorten hospital stays. Assessment teams have a physician attached to them and a pharmacist is usually available for consultation. It is assumed that drug reviews form part of the total assess-ment. What is often lacking is follow up of recommendations. Their influence could be enhanced if, in the area of drug review, the teams could be encouraged to develop means of helping compliance with the recommended drug program, or enlist the cooperation of community organizations.

By definition, medical and paramedical staff are attached to day hospitals and patients are expected to attend from one to several days a week. In this setting there should be no difficulty in assessing drug needs, teaching the individual and/or family the regimen, teaching the rationale for compliance, and noting the capability of individuals to carry through the program. Again, ingenuity may be needed to simplify drug groupings and organize a system to recall times of ingestion, whether this is done by mechanical means or by arranging for family members or community volunteers who remind the patient when medication is due.

Day centres are often structured specifically for the cognitively, emotionally or physically impaired and these programs depend upon stimulation and social supports. However, while attending the centre, staff can remind participants when it is time to take medication. It is assumed that staff will report any concerns regarding patients to relatives or family physicians. It is hoped that when there is a need to encourage participation by a community service, such as public health, the day centre will initiate the process.

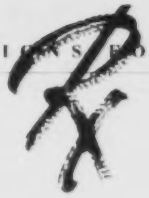
Centres should also be developing educational programs for their patients and caregivers, which can include inviting medical and paramedical personnel to speak on specific topics pertinent to the clientele. Day centres also have the ability to develop volunteer groups with special interests and knowledge which can become a source of support outside the centres.

8.46 The Committee therefore recommends that drug therapy compliance monitoring programs be included as part of the approved programs developed or implemented by community assessment teams, day hospitals and day care centres.

Senior centres, catering to the well-elderly, have developed vibrant programs which include education on maintaining healthy lifestyles. Their focus is on prevention. They have the ability to organize lecture series, health fairs, "brown bag" programs for drug reviews and other activities which are open to members of their communities. They are also capable of organizing volunteer programs which can reach out to the housebound. They represent a latent fount of expertise and ability which has yet to be tapped.

Individuals who can afford it have no difficulty in buying help with their care, which can range from having medications brought to them to assistance in administering drugs. There are numerous private health care agencies with personnel ranging from homemakers to registered nurses who are available on an hourly or sessional rate.

For the vast majority, who cannot afford such a service, there is some assistance available through community agencies. More can be developed utilizing professional personnel, working with volunteers, to provide individuals with the level of help they may require. Cost savings will be from more efficient use of professional services, more effective use of drugs, a decrease in iatrogenic diseases, and a decrease in hospitalizations and use of long-term care institutionalizations.



Chapter IX
Utilization

This chapter looks at the demographics of health care consumers in Ontario and recommends drug benefit coverage for certain categories of individuals not now covered and co-payments for others. The chapter also deals with drug utilization review, adverse drug reporting, misuse and abuse of prescription medications, public education concerning drug abuse and limitations on the prescribing of sedatives, hypnotics and tranquilizers.

9.1 Role of the Consumer

9.1.1 Introduction—a Demographic Profile

In 1989, an estimated 9.5 million residents of Ontario were consumers of health services, including pharmaceutical care.

Since the last census was conducted in 1986, data from that year are used to provide a demographic profile of the 9.1 million Ontarians counted. Slightly more than half (50.9 per cent) of the people were females. About one-fifth (20.5 per cent) were under the age of 14; 68.6 per cent were between the ages of 20 and 64 years; 10.9 per cent were 65 years of age or older. The age and sex population for Ontario has a bulge in it representing the 2.3 million residents who were born between 1950 and 1965. The bulge, 25.3 per cent of the populations, indicates the impact of the post-war baby boom.

Attention has been given to the increasing numbers of persons 65 years of age and older and their uses of health and social services. If current population trends continue, the number of persons reaching old age will continue to increase until about the year 2030, when the last of those born during the post-war baby boom reach the age of 65.

Persons completing the census forms in 1986 were asked where they lived in 1981, the year of the preceding census. The results apply to the 8.4 million residents five years of age and older. The majority—4.6 million individuals — maintained the same residence over the five year interval; 2.0 million residents had moved within the same municipality; 1.2 million moved within Ontario; 286,000 came from other provinces; and 221,300 immigrated from outside Canada. Over this time, 186,170 people five years of age and older left Ontario to live in other provinces. The number of people who left Ontario to live abroad is unknown.

With respect to ethnicity, most Ontarians—61 per cent—were of British descent. The other major ethnic groups identified were French (531,580), Italian (461,375), German (285,155), Dutch (171,150), Chinese (156,170), Portuguese (139,220), and Jewish (127,030). Indians, Metis, and Inuit totalled 167,375.

Of these, 86.1 per cent spoke English only; fewer than one per cent (0.6 per cent) spoke French only; and 11.7 per cent were bilingual. About 143,000 residents spoke neither English nor French.

Three-fourths of Ontarians lived in private households headed by husbands and wives; 8.3 per cent lived in single parent families. The remainder lived in non-family households.

The majority of the residents in the province live in metropolitan areas with populations of 100,000 or more. Metropolitan Toronto had 3.4 million residents in 1986; there were 2.8 million inhabitants in the other metropolitan areas in southern Ontario, and 270,000 lived in Sudbury and Thunder Bay, the largest cities in northern Ontario.

The people of Ontario come from diverse places and ancestries and the mosaic varies from region to region and community to community. The goal of government continues to be to provide access to health care without respect to age, sex, income, ethnicity, or region of residence. One could add that access is to be guaranteed without respect to the type of health problem.

9.1.1.1. A Health Profile of Ontario: "Health Profiles of the Citizens of Ontario: Health Objectives, Performance Indicators, and Surveillance Techniques"[1] was written by Larry Chambers for the Ontario Health Review Panel in 1987; his report continues to be current. The report deals with the burden of ill health and the uses of prescribed and non-prescribed drugs to control health problems. It begins with the patterns of mortality, health problems in the community, uses of health services and a profile of the burden of ill health.

9.1.1.2 Patterns of Mortality: Cardiovascular diseases account for 46 per cent of all deaths; cancer is the second leading cause of death at 28 per cent; accidental deaths, at 8 per cent, are third. Over the past 20 years the age-standardized mortality rates for cardiovascular diseases, accidental deaths, and other leading causes of death, with the exception of cancer, have been on the decline. While there has been notable success in combating some cancers, particularly those that are treated in the early stages, death rates for malignant diseases continue to increase.

To estimate the burden of ill health resulting in death, the focus can be shifted to the age at which individuals die. The concept of potential years of life lost (PYLL) is based on the idea that a death before a given age—usually 75 years—is viewed as an early death. If a person dies of a heart attack at age 45, the death would represent 30 PYLL. A 20 year old killed in a traffic accident would represent 55 PYLL. The method implies that deaths occuring at an early age impose a greater burden or loss on society than deaths that occur at an advanced age.

PYLL's are expressed in thousands of life years lost. The five leading causes of PYLL for Canada in 1986 were cancer (429,000 years), cardiovascular disease (290,000 years), motor vehicle accidents (160,000 years), all other accidents (124,000 years), and suicide (127,000 years). Congenital anomalies and perinatal mortality each contribute about 90,000 PYLL. The PYLL rates are higher for males than females for all leading causes of death.

Life expectancy can be defined as the average number of years of life remaining for persons at a given age. The average life expectancies at birth in 1985 for males and females born in Canada were approximately 72 and 80 years respectively. While the average life expectancy has increased for both sexes over the past 20 years, the rate of increase has been slightly greater for females than males.

[1] Chambers, Larry W., *Health Profiles of the Citizens of Ontario: Health Objectives, Performance Indicators, and Surveillance Techniques*, Canadian Public Health Association, 1987.

Obviously the differences in life expectancy are related to the differences in PYLL noted above.

9.1.2 Health Problems in the Community

Health surveys are used to estimate the prevalence of health problems in the community and the impact the problems have on the lives of individuals. The last major survey conducted in Ontario was during the pilot testing of the Canada Health Survey in 1978-1979.

The Canada Health Survey was not implemented as an ongoing survey as originally planned. Statistics Canada periodically conducts general surveys, and some of these are focused on health-related issues. There have been surveys on health and support in 1985, and work and disability in 1986, and results are reported by province. The government of Ontario is planning to conduct periodic health surveys, and the first one will be inaugurated this year.

Health survey results are based on self-reporting of health problems, limitations and disabilities and the uses of health services and drugs; consequently there may be errors and biases in self-reporting. Furthermore, persons in institutional care, and those too sick or old to respond, are excluded and the results apply to individuals living in the community who were able and willing to complete the interview.

Three trends in the prevalence of health problems by age and sex are noteworthy: individuals under 65 years of age tend to have acute health problems that are time limited in their effects; older persons tend to have chronic problems that require long term attention, and the problems are more likely to limit activities or mobility; and women are more likely to have chronic and disabling conditions than are men.

Arthritis and rheumatism, hypertension, limb and joint disorders, heart disease, and hearing and sight disorders were the most common complaints of persons 65 years of age and older, according to the Canada Health Survey.

The burden of health problems was measured within the framework of the concept of "annual disability days" which combine bed days, days with a loss of major activities, and days with cut-down activities. Adjustments were made to eliminate double counting and to make the annual estimates. There were 15.5 annual disability days for Ontarians in 1978-79. The rates by age were as follows: under 15 years—8.5 days; 15 to 64 years—15.9 days; and 65 years and older—31.5 days.

There are two other trends found consistently in health surveys. First, the prevalence rates for health problems and disability are higher for women than for men. Second, there are important differences in health status related to indicators such as education and income. Individuals with lower levels of income and lower levels of education are at a distinct disadvantage with respect to health status; they do not enjoy the same level of health as those with higher social and economic status.

The findings on health and disability were essentially confirmed in the 1985 general social survey.

In spite of the increasing burden of ill health, the mood and spirits of Canadians remain high. When survey respondents were asked to rate their status, 82 per cent rated their health as good or excellent. Persons who were 75 years of age and older were more likely to report lower ratings; even so, 57 per cent rated their health as good or excellent; 32 per cent rated it fair; and only 12 per cent said they were in poor health. Canadians in general report high levels of happiness. Fewer than 10 per cent, regardless of age, reported they were unhappy.

Satisfaction with health did decline with age and the use of medical services. About one-fifth of the aged reported they were dissatisfied with their health, as compared to 10 per cent of the young adults. In the U.S., Herzog and Rodgers (1983) noted that satisfaction with life increases with age, even though satisfaction with health declines. When it comes to health, only in the face of severe disabling conditions or mental illness does life satisfaction and happiness markedly decline.

9.1.3 The Uses of Health Services

Generally speaking, the latest data available on the costs and uses of health services are for 1985, and while absolute uses and costs of health services have increased since, the profile remains basically the same. According to Health and Welfare Canada, the total expenditures for health care in Ontario in 1985 were $14.5 billion dollars—approximately $1,600 for every individual in the province. The breakdown of the distribution of expenditures is presented in table 9.1. Half of the expenditures were for institutional services; about one quarter were for professional services; 13.5 per cent were for drugs and appliances; and the remaining 10 per cent were for other health expenses.

9.1.3.1 Institutional Care: Three-fourths of the costs for institutional services were directed toward hospital care. During fiscal 1987/88, there were 1.4 million admissions into hospitals in Ontario. One can estimate that 85 per cent of the admissions were first admissions, while the remaining 15 per cent were for persons admitted two or more times during that year. There were 52,089 approved beds in Ontario in that year, or 5.6 beds per 1,000 population.

Table 9.1

Total Health Expenditures in Ontario, 1985 by Category in Millions of Dollars

Total Expense	**14,538.5**	
Personal Health Care	**13,034.5**	
Institutional and related services	**7,292.8**	
Hospitals		5,509.9
Other institutions		1,509.4
Home care		136.6
Ambulances		136.9
Professional services	**3,779.9**	
Physicians		2,617.0
Dentists		928.5
Other professionals		234.5
Drugs and appliances	**1,961.8**	
Prescribed drugs		932.6
Non-prescribed drugs		710.8
Eyeglasses		256.7
Hearing aids		23.8
Other appliances and prostheses		37.9
Other health expenses	**1,504.0**	
Prepayment administration		205.8
Public health		425.7
Capital expenditure		569.7
Health research		127.0
Miscellaneous health costs		175.7

Source: *National Health Expenditures in Canada 1975-1985*, Health and Welfare Canada, Nov. 1987.

There were 4.1 acute care beds per 1,000 population; they accounted for 96.9 per cent of all hospital patients and 71.0 per cent of hospital days. The average length of stay for acute care patients was 8.7 days at the average cost of $344.34 per day.

The most common diagnoses for acute care hospital days were related to circulatory diseases (17.6 per cent), cancer (10.4 per cent), mental disorders (9.6 per cent), digestive disorders (9.0 per cent), injuries and poisonings (7.8 per cent), pregnancy and

childbirth (7.0 per cent) and respiratory diseases (6.8 per cent). The surgical procedures most frequently performed were obstetrical procedures (21.3 per cent), cardiovascular operations (7.5 per cent), tonsillectomy and/or adenoidectomy (4.3 per cent), hernia repairs (4.0 per cent) and hysterectomies (3.2 per cent.) Other surgeries commonly performed include appendectomies, cholecystectomies, transuretheral prostatectomies and dilation and curettage.

Chronic beds accounted for fewer than 5 per cent of hospital patients, but chronic patients had 25.2 per cent of all hospital days. The average length of stay per admission was 267.4 days at a cost of $169.18 per day.

Residents of Ontario received care in other institutional settings as well. The types of facilities (number of beds) include those for aged persons (49,200 beds), the mentally handicapped (16,918), the physically handicapped (6,427), emotionally disturbed children (3,263), the retarded (811) and substance abusers (789). There were 3,295 in beds in other facilities. About 90 per cent of the beds are occupied at any one time, but information on the number of admissions, the average length of stay, and the cost per day for the various facilities, was not available. Ontario, like the rest of Canada, continues to have a high rate of institutional care for health related problems.

9.1.3.2 Professional Services: The next major category of expenditures was for professional services, which accounted for 26 per cent of total expenditures; 70 per cent of expenditures on professional services were for physician fees; 5 per cent were for dentists; and the remaining 25 per cent were for other health professional services.

9.1.3.3 Drugs and Appliances: Expenditures on drugs totalled $1.6 billion and $300 million was spent on eyeglasses, hearing aids and other appliances. Data from IMS (a data service specializing in medical information) indicate that drug companies sold $1.089 billion in prescribed drugs to Ontario drug stores in 1988. The Ontario Drug Benefit (ODB) program paid $354.9 million of the prescribed drug costs during that year, exclusive of dispensing costs and the 10 per cent surcharge on the costs of the drugs. Added to that are drug expenditures by hospitals, which totalled $215.7 million. Public expenditures on prescribed drugs were approximately $570 million, or about 44 per cent of the total.

The data on the total sales of non prescribed drugs in Ontario are not available for 1988, but Health and Welfare Canada estimated that about $710.8 million was spent in 1985. The ODB spent about $43 million for claims for non-prescribed products, or about 6 per cent of that amount.

9.1.3.4 Other Health Expenses: The remaining categories of health expenditures include capital expenditures (3.9 per cent), public health (2.9 per cent), administration of health services (1.4 per cent), research (0.9 per cent) and other costs (1.2 per cent).

9.1.3.5 The Uses of Health Services and Drugs in the Community: The principal reasons for using drugs are to maintain health and manage illness. Drugs may be used as a part of self-care initiative or on the advice of physicians or other professionals. Within a given year, 82 per cent of ambulatory Ontarians can be expected to visit a physician, averaging six visits a year. From the Canada Health Survey, one can estimate the percentages of individuals with one or more consultations with health professionals in a given year. The health professionals, and the percentages of individuals who contacted them are as follows: dentists (50 per cent), optometrist/optician (21 per cent), nurse (13 per cent), pharmacist (5 per cent), chiropractor (5 per cent) and psychologist, social worker or counsellor (5 per cent).

In the survey, one-third of the persons with health problems did not consult a physician. The decision to seek help depended on the nature of the problem. If problems were relatively serious (e.g. diabetes, thyroid disorders, hypertension, or heart disease) medical care was likely obtained. For minor acute problems such as respiratory infections or the flu, individuals reported that the problem was not serious enough to warrant a visit to the physician. Nor did individuals seek help if they thought the problem was under control. Individuals cited time or costs as factors for not seeking care for about 5 per cent of problems.

The most commonly used drugs were vitamins and pain relievers and most of these were taken without the advice of a physician. The most commonly used prescribed drugs were heart and blood pressure medicines, tranquilizers and antibiotics; most of these were taken on the advice of a physician.

Women were more likely to report the use of medications, particularly vitamins, pain relievers and tranquilizers; 22 per cent of the women between the ages of 15 and 44 reported taking birth control pills. Of women between the ages of 45 and 64, 14.6 per cent reported taking hormone pills.

Individuals 65 years of age and older reported the highest rate of drug usage. Nearly 40 per cent of older women and 30 per cent of older men were taking heart and blood pressure medicine. The next most commonly used drugs were vitamins, pain relievers and tranquilizers. The health problems most common among the elderly are related to cardiovascular disease; arthritis, rheumatism and problems with limbs and joints; and mental problems. These conditions impose limitations on activity and are the major causes of disability days. The use of drugs is the key to maintaining the health status of the elderly in Ontario.

As suggested by the data from the Canada Health Survey, individuals engage in self-care and take drugs without consulting a physician. There are two additional decisions that individuals make that the survey did not address. It is generally estimated that about one-fifth of all prescriptions written by physicians are not taken to the pharmacist to be filled. Furthermore it is generally believed that the rate of true compliance is only about 50 per cent. This means that about half of the time, drugs are not taken as prescribed, at the wrong times, or in the wrong amounts. It is very difficult to estimate the impact that unfilled prescriptions and non-compliance have on the health and illnesses of individuals.

9.1.4 The Burden of Ill Health

Wilkins and Adams (1983)[2] combined data on institutional care with the data from the Canada Health Survey to provide a profile of the "healthfulness" of life. They defined six health states: activities not restricted, short term disability only, minor activity restriction, restriction of major activity, impossible to perform major activity, and long term institutional care. While the average life expectancy was about 72 years for males and 80 years for females, the average health expectancy—years free of limitations—was 60 years for males and 63 years for females. Although women live longer than men, they spend more time in disabled states and the differences in health expectancy are considerably less than difference of years of life expected.

By comparing the results of the 1978 health statistics and the Canada Health Survey with health statistics from 1951 and the Canada

[2] Wilkins, R. and O.B. Adams, "Health Expectancy in Canada, late 1970s: demographic, regional and social dimensions," *American Journal of Public Health*, 73(9): 1073-80 (1983).

Sickness Survey, Wilkins and Adams (1987)[3] estimated that while the life expectancy rose by 4.5 years for males and 7.5 years for females, the expected years free of limitations increased by 1.3 and 1.4 years respectively. This suggests that there was a trade off between death and disability: 70 per cent of the gain in life years for men and 80 per cent of the increased years for women were spent in states of disability.

Working from a scale where death is given a value of 0 and normal healthy life is valued as 1, they gave the various disability states values ranging between 0 and 1. The values were 0.4 for long term institutional care, 0.5 for unable to do major activity, 0.6 for restriction in major activity, 0.7 for minor restriction in activity, and 0.5 for short term disability. The person years expected for each disability state were multiplied by these values, to arrive at a figure for quality adjusted life expectancy, or life years. Between 1951 and 1978, the average life expectancy increased by 6.0 years for all Canadians, but the quality adjusted life expectancy increased by only 3.7 years. While the average gain of life expectancy was 6.0 years, 4.7 of these were spent in disabled states and 1.3 years were disability free. Quality adjusted life expectancy varies by region of the country, sex, and income. The quality adjusted life expectancy for Ontario is 69.1 years. By region, the lowest value was for the Atlantic provinces (67.8 years) while the Prairies had the highest (69.2 years). As one would expect, the quality adjusted life expectancy is higher for Ontario women (72.1 years) than for Ontario men (66.1 years).

Wilkins and Adams categorized the income of Canadians into quintiles. Canadians in the top quintile had an average life expectancy of 76.4 years. Persons in the lowest quintile for income had an average life expectancy of 71.9 years and a quality adjusted life expectancy of 64.6 years. For every indicator of morbidity, disability, and death, low income is associated with poor health outcomes.

There is considerable debate by demographers and epidemiologists as to whether the prevalence rates of disability have increased over the past 20 years. Rates of long term institutional care of the elderly have increased in Canada. In the early 1960s, the rate of long term institutional care was 6.4 per cent for elderly Canadians and by 1984 this had increased to 7.8 per cent. Similar increases have been observed in the U.S.

There is controversy about levels of self-reported disability because of the changes in methods and the ways in which questions were worded. There is agreement that the self-reported disability has increased for all age groups, although some would argue that the changes are artifacts of variations in methods.

Verbrugge[4] who believes the changes are real, has studied the changes in morbidity and mortality for middle-aged and older persons in the U.S. She has noted the patterns of morbidity and mortality for "killer" and "nonkiller" conditions. With respect to killer conditions, there is the pattern of rising morbidity and declining mortality (e.g. diabetes, heart diseases, hypertension, and cerebrovascular diseases), rising morbidity and mortality (e.g. malignant neoplasms, asthma, chronic obstructive lung diseases in the elderly), declining morbidity and mortality (e.g. hernias and nephritis in elderly men), and declining morbidity but rising mortality (e.g. cirrhosis of the liver in elderly men.) With respect to non-killer diseases, she has noted the patterns of rising morbidity (e.g. respiratory, musculoskeletal, and some skin

3 Wilkins, R. and O.B. Adams, "Changes in the healthfulness of life of the elderly population: an empirical approach," Review Epidemiologique Santé Publique 35(3-4): 225-35.

4 Verbrugge, Lois M. "Longer Life but Worsening Health? Trends in Health and Mortality of Middle-aged and Older Persons," *Milbank Memorial Fund Quarterly Health and Society*. 1984: 62(3): 457-519.

conditions) and declining morbidity (e.g. varicose veins, haemorrhoids, peptic ulcers, and gallbladder diseases.) In summary, the general trends show a rise in chronic and disabling conditions, with declining morbidity observed for only a few indicators.

Canada, as well as the U.S., is in an era of longer life and declining health. Worsening health in the community can most likely be attributed to the higher incidence of chronic diseases, earlier diagnosis of chronic conditions, earlier accommodations in activities for disease, and improved survival. Longer life is most likely due to earlier or better treatment of chronic conditions, improved self-care for disease, and improvements in medical care technology (e.g. neonatal intensive care, trauma care, medical and surgical management of heart conditions, transplants, and so on.) As Verbrugge notes, increased morbidity and declining mortality can be seen as logical result of the medical and social changes that have occurred in the last 25 years.

9.1.5 Ontario Drug Benefit Program—Use and Access

9.1.5.1 The Growth and Use of the Ontario Drug Benefit Plan: The ODB plan was originally designed to provide drug coverage for persons 65 years of older. The government extended the benefits to cover other groups of residents, including recipients of family benefits and general welfare assistance who require assistance with large drug bills, and patients in home care and extended care programs.

In the fiscal year 1976/77, the ODB plan had 861,476 beneficiaries who made claims which cost government $67.7 million. During the last fiscal year, 1988/89, 1.5 million beneficiaries made 35.4 million claims at a cost of $638.1 million. If the costs are stated in 1988 dollars adjusted for increases in the consumer price index (CPI), the cost of the program increased from $154.2 million in 1976/77 to $630 million, an increase of 313.8 per cent.

There are six basic components to ODB costs: 1) the number of ODB claimants; 2) the average number of claims per claimant for which there is a dispensing fee (prescribed drugs); 3) the average dispensing fee per claim for prescribed drugs; 4) the average cost of the prescribed drugs per claim; 5) the average number of claims for non-prescribed drugs per claimant; and 6) the average cost per claim for non-prescribed drugs.

The component costs of the ODB program have increased at different rates. To determine the rates of increase for the various components, increases over the 12 years were indexed to the 1976/77 fiscal year and all dollar amounts are stated in constant 1988 dollars.

If all components had increased at the same rate as the CPI, there would have been no increases in the costs of the ODB program as expressed in constant 1988 dollars. The levels of activity and costs of each component were adjusted to the 1988/89 value; values for the other components were held at the 1976/77 levels to determine the increase in constant dollars that can be attributed to that component.

For example, the number of claimants increased from 861,476 individuals in 1976/77 to 1,501,409 in 1988/89. If one allows for the increase in the number of claimants, while assuming that the number and cost of claims for prescribed and non-prescribed drugs remained at the 1976/77 levels, one could determine the rate of increase in the costs of the ODB program due to the increased number of claimants per se.

The components were adjusted one at a time to determine the impact of each on ODB costs. Over the 12 year period, the component with the highest rate of increase was the number

of claimants. The increased number of claimants alone would have resulted in a 74.3 increase in costs. This component is determined by the ageing of the population and by government changes in eligibility for coverage.

The component with the second highest rate of change was the average number of claims for prescribed drugs per claimant. Assuming that the general levels of health of the claimants had not changed over the period, the increase could be attributed to the prescribing patterns of Ontario physicians. To the extent that the case mix of claimants changed, an increase in the average number of claims per claimants could reflect the changes in the health levels of the claimants. If only the average number of claims for prescribed drugs had changed, there would have been a 50.1 per cent increase in the costs of the ODB program during the 12 year period.

The average cost of prescribed drugs was the third most important component driving costs. If all other components had remained the same and only the price of drugs had changed, the increase in the constant dollar costs would have been 48.4 per cent over the 12 years. The increase in drug costs could be due to the introduction of new, improved, and more expensive drug products, changes in selection of drug products by the physicians, and the inclusion of the 10 per cent upcharge in the price of the prescribed drugs.

The costs associated with the average dispensing fee, the average number of claims for non-prescribed drugs, and the average costs per claim for non-prescribed drugs, remained at levels consistent with changes in the CPI. The increases associated with these components were 3.2 per cent for dispensing fees, 4.0 per cent for average number of claims for non-prescribed drugs, and 1.6 per cent for the average cost of non-prescribed drugs per claim. Clearly, these costs did not contribute in any important way to the overall increase in the costs of the ODB program.

9.1.5.2 Relative Importance of Components to Overall Increases in Program Costs: The total costs of the ODB increased by some $476 million over the 12 year period. We can take the $476 million increase as the base amount and assess the relative importance of the components in accounting for this increase. The increase in the number of claimants accounts for $114.6 million of the increase. Increases attributable to the average number of prescriptions and average cost of prescribed drugs are $77.3 million and $74.7 million. Increases attributable to dispensing fees, claims and costs of non-prescribed drugs are minimal.

Stated another way, 24.2 per cent of the increase is due to the increased number of claimants; 16.2 per cent is due to the average number of prescriptions; and 15.7 per cent is due to the average costs of prescribed drugs. Individually, these components account for 56.1 per cent of the $476 million increase in costs. There were more claimants, each claimant had more prescriptions, and the costs per prescribed drug increased. The effects of the three components become multiplied, and the multiplicative effects accounted for 39.3 per cent of the costs above and beyond the increases due to the independent effects of the three major components.

Less than 4 per cent of the $476 million increase could be attributed to the independent and multiplicative effects of the dispensing fee, and the claims for, and costs of, non-prescribed drugs.

9.1.5.3 Use of ODB by Type of Beneficiary: The ODB plan covers persons 65 of years of age and older (995,800), persons receiving family benefits (233,400) and general welfare assistance (237,900) who require assistance with drug bills, and patients in home care (21,300) and extended care programs (9,900). Even though the eligibility criteria for persons receiving family benefits or welfare have broadened, the largest increase in the number of claimants was due to the ageing of the

population. The number of claimants increased by 640,000, and the increase in the number of elderly accounted for 63.8 per cent of the increase. In 1976/77, 68.3 per cent of the claimants were 65 years of age or older; in 1988/89 they made up 63.4 per cent of those receiving Ontario drug benefits.

The average annual cost of claims for the aged was about $512; it was $486 for those on extended care and $522 for persons on home care. Average cost for Ontarians receiving family benefits and general welfare assistance was $377 and $137 respectively. Even with the expansion of the ODB for recipients of home care, family benefits, and general welfare assistance, 80 per cent of the programs were for the aged, and this percentage was essentially the same as for the 1976/77 fiscal year.

9.1.5.4 The Projected Growth in the Numbers of Elderly: Between the 1976 and 1986 censuses, the number of Ontarians over 64 years of age increased by 34.5 per cent, from 739,000 to 994,000. The Ontario Treasury Board set forth assumptions about future trends in fertility, mortality and migration to estimate the growth of the population of Ontario through the year 2011. Their estimates indicate that there will 1.9 million Ontarians 65 years of age and older by 2011, or 86.2 per cent more than there were in 1986.

The aged are frequently grouped into three categories: the young-old (65 to 74 years), the middle-old (75 to 84) and the old-old (85 and older.) In 1976, 8.2 per cent of the aged were the old-old, who should make up 13.5 per cent of the aged in 2011. Stated another way, the age composition of the elderly should shift toward the later years.

The figures are deceptive. Generally, health care costs increase with age, rising dramatically within the year preceding death. As the probability of death increases with age, the data per se suggest that age, in and of itself, is an important determinant of cost. In fact, health care costs of the aged who live independently in the community do not increase dramatically with age and this is specifically true for the costs of drug benefits.

9.1.6 Access to Other Drug Plans in Ontario

ODB claimants comprise about 16 per cent of Ontarians; they account for about 45 per cent all prescribed drugs. We asked Prof. Jeremiah Hurley to undertake a study of access to drug insurance for residents not covered by ODB and the material in this section comes largely from his report. (See volume II.)

9.1.6.1 Coverage by Private Insurance: Virtually all private health insurance plans that cover the costs of prescribed drugs are provided through group plans at the place of employment. With rare exceptions, private drug plans do not cover non-prescribed, or over-the-counter drugs.

The two largest insurers are Blue Cross and Green Shield. In 1988 Blue Cross provided coverage to 1,029,975 individuals, comprised of subscribers and their dependents. Green Shield provided coverage for 460,177 individuals in 1987, so one can estimate that the two plans cover about 1.5 million Ontarians. While Blue Cross and Green Shield are the largest private health insurers, 137 other insurance companies provided health benefits in Ontario in 1987. Together, they paid an estimated $356 million in benefits in that year.

Most drug benefits are covered in plans that include other health benefits such as expanded hospital coverage, dental care, eyeglasses and health costs while travelling. As individuals may subscribe to more than one plan, the number of individuals covered under the plans can exceed the number of individuals in the province. The plans also vary with respect to co-payments and

deductibles, so it is nearly impossible to determine the degree to which drug costs of Ontarians are covered by private insurance companies.

Hurley contacted 36 of the larger trade unions and trade and professional organizations in an attempt to identify the degree to which drug plans are included as a fringe benefit of employment. However, most of them do not collect information on health insurance benefits offered through the place of employment.

He was able to draw a number of interesting conclusions from the information that was available: 1) all municipal employees in Ontario have some type of drug coverage, but the comprehensiveness of the coverage varies by municipality; 2) all provincial and federal government employees have drug coverage. Members of the Canadian Union of Public Employees pay a 20 per cent co-insurance rate toward the cost of each prescription; 3) most union members have drug coverage, but the percentage covered could not be accurately estimated; 4) about one-quarter of the members of the Ontario Federation of Agriculture have coverage through a drug plan promoted by the federation; and 5) according to the 1988-89 survey of wages and working conditions for hourly-paid employees, conducted by the Canadian Manufacturers Association, 96 per cent of the hourly employees in manufacturing industries have drug coverage. It should be noted that only 25 per cent of those contacted responded, so the findings are of limited value.

While it was not possible for Hurley to provide precise estimates, he found no evidence to refute the often quoted figure that 85 per cent of the residents of the province have some form of third party coverage. This would suggest that beyond the 1.5 million ODB claimants, about 6.7 million Ontarians have private coverage, and 1.4 million residents are without third party drug coverage.

9.1.6.2 Identifying Problems in Coverage: It is incorrect to assume that persons with third party coverage are without problems in paying drug costs. Co-insurance, deductibles, and co-payments may serve as barriers to obtaining prescribed drugs. Some non-prescription drugs and nutritional supplements are not covered and there may be instances in which their costs are high for individual consumers. Furthermore drug plans may not cover conditions existing at the time the person enrolls, or may limit the amounts the plan will cover over the lifetime of the individual. Even so, there is a consensus that private insurance plans ensure basic access to prescribed drugs.

Lack of access to a third party drug plan may compromise the quality of health care received by two specific groups. The first consists of individuals in families, or unattached individuals, without insurance through the workplace, who have low incomes but are above the eligibility limits for family benefits or general welfare assistance. The second group is composed of individuals with extraordinary drug costs, particularly those with chronic diseases or disabling conditions who are not covered by disease-specific plans provided by the government, workmen's compensation, family benefits, general welfare assistance or the ODB. There is some overlap between the two groups as persons with chronic and disabling conditions may also be members of the low income group.

There is no definitive official definition of poverty in Canada. Statistics Canada, the Canadian Council on Social Development, the Metropolitan Toronto Social Planning Council, and the Senate's special committee on poverty

have provided guidelines for defining poverty. (Ross and Shillington 1989)[5]. Statistics Canada has defined low income cut-offs based on the proportion of average family income devoted to the essentials of food, shelter and clothing. The figures are adjusted for size of area of residence and the number of persons in the family. According to the guidelines, 9.3 per cent of families and 32.7 per cent of unattached individuals in Ontario had low incomes in 1987.

Using data from Statistics Canada, Hurley estimated that in 1987, 18 per cent of Ontario households—families and unattached individuals—had annual incomes below $15,000. After subtracting the households receiving family benefits and general welfare assistance, and households headed by individuals aged 65 and over whose incomes were less than $15,000, he estimated that there are about 138,000 low income households ineligible for public assistance or coverage for drug costs. At an estimated 3.5 individuals per household, this means there are 500,000 low income Ontarians in need of a drug plan.

Individuals with high drug costs could qualify for assistance through either of two municipal programs: special assistance or supplementary assistance. In the 1987/88 fiscal year, $2 million were expended for drugs through these special programs. Hurley estimated that at most, this sum would have translated into benefits for no more than a few thousand households.

The second group consists of the chronically ill and disabled. During the 1986 census, questions were asked about disabled household members. Statistics Canada[6] conducted the follow-up health and activity limitation survey to collect extensive information on disabled individuals. The results suggest that there were 674,330 disabled individuals between the ages of 15 and 64 years in Ontario in 1986-87. Their disabilities were classified as mild (54.2 per cent), moderate (30.0 per cent), or severe (15.8 per cent). It can be noted that 32 per cent of the recipients of family benefits and general welfare assistance are disabled. Working from the census data, about 55 per cent of disabled persons between the ages of 15 and 64 years had incomes below $10,000; another 11 per cent had incomes between $10,000 and $14,999; 14 per cent had incomes between $15,000 and $24,999; and 18 per cent had incomes over $25,000. The lowest income individuals are likely covered by social assistance programs. Those with incomes between social assistance eligibility and $15,000 belong to the low income group.

About one-third of disabled adults under 65 years of age have incomes in excess of the $15,000. There are no data on the drug expenditures of the 200,000 or so individuals who would fall within this group. About 190,000 disabled individuals had expenditures for prescription and non-prescription drugs, and 71,375 reported they did not have a plan for health and medical services. By definition, they would be under 65 years of age and not covered by social assistance.

There are an estimated 500,000 low income individuals not covered by old age and social assistance benefits. We can further estimate that there are between 60,000 and 190,000 individuals with disabilities who have incomes above the low income guidelines but should be considered for coverage under the ODB plan (table 9.2.) There are two estimates for the costs of extending ODB: the average cost for a general welfare assistance recipient of $107 per year, or the average cost of $337 per year for a recipient of family benefits.

[5] Ross, David P. and F. Shillington, *Canadian Fact Book on Poverty*, Canadian Council on Social Development, Ottawa, 1989.
[6] Statistics Canada, *Report of the Canadian Health and Disability Survey 1983-84*, cat. no. 82-555E, 1986.

The estimated annual costs for extending the coverage range from extremes of $59.2 million to $232.5 million. A mid-range estimated is $150 million.

Table 9.2

Costs estimates for adding low income and disabled persons to ODB

	Cost estimates in millions	
	Low	High
Potential recipients		
560,000	$59.2	$188.7
690,000	$73.8	$232.5

In an interim report, the Inquiry recommended that coverage be extended to persons with cystic fibrosis and thalassemia; that recommendation was acted upon by the Ministry. There were also recommendations to the Inquiry that individuals with other diseases be covered, or that coverage be extended to all individuals with diseases which are managed through the extensive use of drugs. For example, the Advocacy Resource Centre for the Handicapped[7] recommended that Ontario drug benefits be extended for individuals with chronic arthritis, kidney disease, cancer, diabetes, and multiple sclerosis. Since the numbers of Ontarians with these and other chronic conditions are not known, it is not possible to estimate the number of individuals with catastrophic drug costs.

9.1.6.3 Strategies for Extending Coverage: The Social Assistance Review Committee[8] noted that the loss of drug benefits served as a disincentive for individuals with earnings slightly above the limit to leave public assistance. It recommended buffers in the eligibility criteria of $50 per month for unattached individuals and $100 for families, and the recommendation was implemented on October 1, 1989 in the supports to employment program (STEPS).

The Ministry of Community and Social Services subsequently made a further revision in eligibility requirements for STEPS. An individual with high drug costs and low income can apply for special assistance. Drug costs are subtracted from the income and if the amount remaining is below that required for basic needs, the individual is eligible for drug benefits. The impact of this policy, which is still being implemented, has yet to be determined.

The Inquiry recognizes that STEPS has resolved the problem of catastrophic drug costs for low income persons. However, the Inquiry recognizes that the dignity of individuals who have to pass the social assistance test—which considers circumstances and assets in addition to income—may be compromised. A mainstream program available to all individuals, and based on a means test, could cover catastrophic drug costs in an unobtrusive manner. For example, the criteria for the income means test could be the same as for the guaranteed annual income supplements for senior citizens. These are $827 a month for single persons and $1,373 for couples, and the income levels could be adjusted for the number of dependent children, as is currently the case with the social assistance programs. Individuals would be eligible if their monthly income, minus drug costs, fell below the criteria of the means test.

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8 Thomson, G., chairman, *Transitions*. Report of the Social Assistance Review Committee, Ministry of Community & Social Services, Toronto, 1988

The following recommendation assumes that the impact of the STEP program, and any modifications to it, are carefully assessed through well-designed studies to ensure that the program is accomplishing its intended objectives.

9.1 The Committee therefore recommends that low income individuals, or individuals with catastrophic drug costs, who do not have coverage through a private health insurance plan, have drug costs covered through a plan based on an income means test, adjusted for the number of dependents, in accordance with social assistance guidelines, and that copayments should be introduced for individuals and families with incomes above social assistance levels.

9.1.6.4 Drug Plan Coverage and Cost-sharing: Of the 9.5 million Ontario residents, approximately 1.5 million receive benefits under the ODB plan, and all their drugs costs are covered. The extension of the plan to include low income individuals, and individuals with catastrophic drug costs, could add an additional 690,000 recipients.

There are another 5.6 million Ontarians with drug coverage through private health insurance plans. Hurley was unable to obtain detailed information of the level of cost-sharing required by subscribers to the plans of 139 insurance companies providing coverage. But based on aggregate data provided by Blue Cross, the average cost per prescription was $23.13 in 1988; the beneficiary paid $1.59—or 7 per cent of this. The average subscriber paid $18.91 in drug costs out-of-pocket for that year. The per prescription price to the subscriber of Green Shield ranges from zero to $5; on average, subscribers paid 49.5 cents per prescription.

Even with the extension of the ODB plan to cover low income individuals and persons with catastrophic drug costs, there will still be between 700,000 and 800,000 individuals without third party coverage for drug costs. One option for providing coverage for them is to extend OHIP to include drugs. A second option would be for the government to sponsor a plan, with or without cost-sharing, with private insurance companies for persons unable to secure coverage through the place of employment. Given the lack of apparent interest in either of these options, the Inquiry gave them minimal consideration.
Drug plan coverage of costs has a direct bearing on consumer behaviour. If drugs are free the consumer uses them more frequently than if he or she has to pay part or all of the cost. Physicians and pharmacists agree that the number of prescriptions written and dispensed increases when a patient becomes eligible for coverage under the ODB plan. In fact, physicians directly or indirectly ensure that patients receive the benefits for which they are eligible; pharmacists bill ODB directly for the drug costs and the patient is free to take advantage of the plan.

There is little question that the introduction of a fee or copayment for drugs reduces utilization. Hurley has reviewed the evidence on the impact of consumer responses to changes in costs of obtaining drugs. He first considered the impact of a charge of $2.50 per prescription, and estimated that drug use would drop between 10 and 20 per cent. He further estimated the elasticity of demand for each additional $0.50 increment in the charge per prescription. Elasticity of demand is defined as:

$$\text{Elasticity} = \frac{\text{Per cent change in use}}{\text{Per cent change in price}}$$

Hurley estimated the elasticity of demand to range between -0.10 (a 10 per cent decline in the use of drugs for every 100 per cent increase in the price of drugs) and -0.40. We are taking the value of -0.10 as an estimate of the minimum impact and –0.20 as an estimate of moderate impact.

The impact of introducing copayments is twofold. There is the initial reduction in drug use for a given copayment (between 10 and 20 per cent for a starting copayment of $2.50) and the elasticity of demand for each additional $.50 increment in the copayment (the most likely estimates range between -0.10 and -0.20) For consumers with a drug plan that covered all drug costs, a $3.50 copayment would likely result in 13.6 per cent to 26.4 per cent reduction in use. Reductions in drug use for a $5 copayment would be between 19.0 per cent and 36.0 per cent; it would be between 28.0 per cent and 52.0 per cent for a $7.50 copayment.

Drugs taken vary in their appropriateness and effectiveness. Evidence from the experimental studies and the medicare services in the U.S. clearly indicates that the reduction in use related to copayment is unrelated to the appropriateness or effectiveness of the drugs. Consumers reduce their use of essential drugs as well as nonessential drugs but the impact of the reduction on their health is not known.

As noted, most residents of Ontario have drug coverage plans with cost-sharing in the form of copayments and deductibles. While all provinces have programs comparable to the ODB plan, four provinces/territories require no cost-sharing whatsoever. They are Ontario, Northwest Territories, Nova Scotia, and the Yukon. The other provinces require cost-sharing by beneficiaries not receiving social assistance, in the form of deductibles, coinsurance or a fixed charge per prescription, with or without a cap on expenditures. Saskatchewan and B.C. have recently introduced consumer charges, but the actual impact of the copayment on drug use by the aged and persons on social assistance has yet to be determined.

There are trade offs in ensuring access to drug coverage, consumer responsibilities for the cost of drugs, and government expenditures on health care. Given the varying cost-sharing arrangements of private health insurance plans, the Inquiry considered the introduction of copayments in the form of fixed charges per prescription for seniors not receiving social assistance. About 60 per cent of seniors in Ontario have incomes beyond the eligibility criteria for guaranteed annual income supplements, which are $827 a month for individuals and $1,373 for couples. The Inquiry considered the impact of introducing $3 or $4 charge per prescription with a cap on expenditures of $250 per year. That is, senior citizens not receiving GAINS would pay $3 or $4 per prescription, regardless of the cost of the drug, up to $250 in any one year. After the cap is reached all drug costs would be covered. In the last fiscal year of the ODB program, the average cost per prescription was about $18 so the recommended copayments would represent 17 and 22 per cent of the average prescription cost. The copayment would increase consumer participation in health care, constrain the costs of the ODB program, and presumably would not significantly reduce the use of appropriate and essential drugs. The impact of the copayment should be carefully assessed through well designed studies to ensure that quality of care is not compromised.

In estimating the effects of copayments, we allowed that the impact on use would be low or moderate until the cap was reached, at which point there would be no further reductions in use.

We estimate that the average annual costs of copayments for the seniors who pay would be between $65 and $90 a year, with no more than 10 per cent of the recipients reaching the $250 cap.

It should be noted that physicians tend to write prescriptions for ODB beneficiaries to last 30 days. If larger quantities were prescribed, the number of prescriptions would be

Figure 9.3

Impact of Copayments on Costs and Savings in Millions of Dollars

Copayment	Consumer Impact	Decrease in claims	Costs to Consumer	Costs to ODB	Savings for ODB
$3.00	Low	11.5%	$47.0	$244.4	$81.6
	Moderate	22.8%	41.4	212.6	113.4
$4.00	Low	14.4%	57.9	225.8	102.2
	Moderate	28.6%	49.8	185.2	140.8

reduced and recipients could receive the same amount of medication with fewer prescription charges. This would reduce the costs to ODB and the paying consumer, but would have to be considered in the light of other factors such as the need for on-going monitoring of patients during drug therapy.

Low income individuals and individuals with chronic disease could also be asked to make copayments if they had incomes above the revised social assistance limits. Using the mid-range estimates of the effects of copayments per prescription, the average low income consumer would pay about $35 per year if the copayments were $3, and $44 per year if the copayments were $4. The mid-range estimate of the cost to ODB would be more in the order of $95 million rather than the $150 million if coverage was complete. The government could extend the coverage to include low income individuals and persons with high drug costs and introduce modest copayments for those not receiving social assistance; the money saved could offset the costs of extended coverage.

9.2 The Committee therefore recommends that recipients of Ontario Drug Benefit plan benefits not on social assistance should be required to participate in the costs of prescriptions. Cost-sharing should be in the form of a fixed charge per prescription of not more than $4. The maximum amount to be paid by the consumer for prescription drugs in any given year should be $250 and any drug costs above that amount should be completely covered by the ODB.

The impact of the copayment on drug use should be carefully assessed through well designed studies.

9.1.6.5 Coverage: A Summary of Options: Access, quality of care and cost constraint are countervailing forces in planning health care policy. To extend OHIP to cover all drugs in the ODB formulary as well as related dispensing fees would ensure universal and comprehensive access to drugs. Quality of care would be enhanced to the degree that the use of appropriate and necessary drugs is improved. The Ministry of Health would essentially pay for all prescribed drugs sold in the province and the dispensing fees of the pharmacists. Health insurance companies would either restructure their policies and fee schedules to cover extended health benefits other than drugs, or drop their plans.

A second option would be to extend ODB drug coverage to all persons who are either without third party insurance or have inadequate coverage for major drug expenditures. Cost-sharing by the consumer could serve to control government costs. The government would essentially fill the gaps left by current public and private policies. Consumers may seek to shift coverage from private to a public plan in order to improve coverage and perhaps

reduce the out-of-pocket expenses. Similarly, the private carriers may seek to restructure their plans so as to eliminate high risk cases.

The third option is preferred by the Inquiry: it is to continue private health insurance plans for drug costs and employ an income means test to cover all cases where costs pose barriers to consumers' use of necessary and essential drugs. Copayments could be required of all recipients not eligible for social assistance. This could be accomplished by basing the STEP program on an income means test rather the social assistance test that is currently employed. Under these arrangements the insurance companies may modify their plans to switch subscribers with high drug costs to the public plan, or the consumer with high drug costs may prefer the public plan to private coverage.

The fourth option is to make minor modifications to the present system. The first step would be to monitor the impact of the current STEP program to assure that it is meeting the needs of lower income individuals and persons with catastrophic drug costs. Copayments for persons not receiving social assistance would control the costs the ODB program.

9.1.7 Informed Consumer Choice

With respect to pharmaceutical care, individuals in Ontario can be viewed as "patients" and as "pure consumers." Recipients of health care services are generally regarded as patients who are dependent on physicians who diagnose and prescribe. The doctor-patient relationship is based on the authority, expertise and legal and professional rights and obligations of the physician as well as the needs of the patient, who can be somewhat dependent and passive in the encounter. In a similar vein, the patient goes to the pharmacist who dispenses the prescribed drug and arranges for payment in accordance with the coverage the patient has for drug costs. The pharmacist may provide the patient with instructions for taking the drug and information on side effects, adverse reactions, and use with other drugs.

The pharmacist may be in contact with the physician for information or to inform the prescriber about possible problems or contra-indications for the prescribed drug. In this sense, one can speak of the doctor-patient-pharmacist triad.

The consumer is also a "pure" consumer. With respect to prevention and health maintenance, individuals consume vitamins, minerals and other nutritional supplements in either recommended or mega doses or they may eschew dependence upon drugs or supplements. If there are allergies, sinus problems, migraine headaches or similar complaints, the individual may consume a variety of non-prescription medications or prescribed drugs.

If the person has as ongoing chronic problem or disabling condition, the consumer becomes involved in self-care and makes decisions about seeking and taking prescribed and non-prescribed drugs. In the case of acute episodes, the consumer decides at what point to seek professional care and how to respond to medical advice and the information provided by the pharmacist. In part, the response may be based on the ability to pay.

This section of the report looks at the individual as consumer and patient. In addition to exploring the issues of self-care and professional care, we examine the issues related to monitoring of pharmaceutical care received by the individual and policies related to the rational prescribing and dispensing of drugs.

9.1.7.1 Self-care: Results from the Canada Health Survey indicate that individuals use a variety of drugs, vitamins, minerals, nutrition supplements and other health products to

promote health and prevent disease. There have been extensive studies of the effects of mega doses of vitamin C to prevent and minimize the effects of colds and other afflictions, but most of the supposed preventive remedies and strategies have not been systematically evaluated.

Researchers have used health diaries to study symptoms that individuals experience daily and what they did about them. One can note that symptoms and complaints presented in the doctor's office are the tip of the iceberg. Most of the morbidity is found in the daily symptoms and problems for which individuals do not seek professional care. As Verbrugge and Ascione[9] report, the most common actions are to take prescribed or non-prescribed drugs, consult with relatives or friends, restrict activity and, lastly, to seek medical care. The actions taken are related to the frequency, duration, and severity of the symptoms.

Where attempts have been made to assess the appropriateness of self-care and self-medication by family physicians, the consensus appears to be that, by and large, self-care steps taken by "healthy" adults for common problems and complaints were appropriate.

9.1.7.2 Professional Care: When an individual comes to the physician as a patient, the customary procedure is for that person to present symptoms, complaints or questions for the physician to assess. Occasionally a patient may ask for a drug without discussing the underlying problem although, according to the physicians who participated in the survey by Williams and Cockerill, this happens relatively infrequently in practice (see appendices, volume II.)

The physician is responsible for managing the therapy of the patient. The patient may have preferences, or indeed may expect or demand that a specific treatment modality or drug be prescribed. While physicians participating in the survey by Williams and Cockerill reported that this happened, fewer than 10 per cent reported that pressure from the patient is an important influence in the prescription of drugs.

Physicians are also subject to counter pressures. On one hand, they may counsel patients not to take a drug for a given problem; physicians in the survey report doing so about five times a week. On the other hand, there is pressure for the physician to do something by the end of the patient visit and about half the physicians in the survey indicated that they prescribed a drug occasionally when it probably was not needed.

Consumers go to pharmacies to have prescriptions filled and purchase non-prescribed drugs; they may or may not consult with pharmacists while they are there. Pharmacists surveyed reported that they spent about half of their time dispensing prescriptions, about 11 per cent of their time counselling patients, and 10 per cent of their time recommending and selling non-prescription drugs. There is also the prescriber-dispenser-patient triad mentioned earlier, and pharmacists report spending up to 10 per cent of their time contacting physicians about prescriptions and discussing the therapy of choice. The majority of the pharmacists surveyed approved having greater responsibilities in counselling patients and prescribers about drugs and non-drug alternative therapies. The role of the pharmacist is discussed in section 8.1 of the report.

9.1.7.3 Education and Information about Drugs: To determine the public availability of drug information, we asked a professor in the faculty of library and information science at the University of Toronto to survey public libraries, book stores, and articles in popular magazines.

[9] Verbrugge, Lois M. and Frank J. Ascione, "Exploring the Iceberg: Common Symptoms and How People Care for Them." *Medical Care*, 25(6): 539-569, 1987.

The Compendium of Pharmaceuticals and Specialities is commonly found in public libraries. Other reference books found in the library included **Joe Graedon's People's Pharmacy, Handbook of Non-Prescription Drugs,** and the **Ontario Drug Benefit Formulary.**

Book stores have special sections for health, and there were more than 50 titles in these sections. The most frequently encountered titles were **The Pill Book** by Silverman and Simon and **Understanding Canadian Prescriptions** by Smith. As expected, the selection of titles of popular books was much wider in the libraries than the book stores.

The listings in the **Consumer Health and Nutrition Index** indicate that the number of popular magazine articles on health care is voluminous.

An earlier survey for the health committee of the Consumers' Health Association of Canada showed that, in order of descending frequency, most consumers obtain their health information from health care providers, media such as popular magazines, newspapers, television programs, relatives and friends, health care organizations, public libraries and the local book stores.

Consumers are besieged with information about drugs through advertising of drug products and health maintenance strategies in articles and books, programs on the electronic media, and the information they receive from friends, relatives, and health care professionals. The information that is available may neither be the best, nor the most appropriate, for rational use by the consumer.

Education and information on drugs and their use may be directed toward providing the consumer with a general orientation or perpective on drug use. Alternatively, consumers may be given specific information on recommended drugs or strategies for self-care of specific health problems. Health education in the schools could be structured to include information on the role of drugs in maintaining and promoting health and the use and abuse of drugs.

There have been innovative approaches to health education. For example, Time Stitches is a game for elementary and junior high school students wherein players have one hour to live unless they change their unhealthy lifestyles. The players are required to answer questions on drugs, drug awareness, nutrition, and general health. The Victorian Order of Nurses developed a game called Spinach, modeled after the game Trivial Pursuit. It is designed to help seniors anticipate changes that come with age and develop strategies for handling the changes. Questions are related to health care, including the use of drugs. Games and other strategies can be adopted by agencies for incorporation in programs for recreational and social services.

Drug manufacturers may advertise non-prescription drugs, but they are prohibited from direct public advertising of prescription drugs. They can use advertising to suggest that persons with particular problems should consult with their doctors, particularly if there is a drug product of choice that doctors are likely to prescribe for that problem. The relative importance or influence of advertising in shaping the decisions of consumers has not been determined.

Physicians and other health professionals have key responsibilities for educating consumers about drugs. Visiting nurses, pharmacists and doctors can review the drugs consumers have on hand and provide information on their appropriate use or disposal.

Health professionals are expected to advise consumers on drug and non-drug alternatives for the management of specific problems. For example, the consensus conference on non-pharmacological approaches to the management of high blood pressure has just released its guidelines for managing hypertension

through changes in lifestyles, nutrition and stress management and on how pharmacological and non-pharmacological measures can be combined in the prevention and treatment of high blood pressure.

Health professionals are also responsible for informing patients about drug therapies for managing specific problems. In addition to the instructions for taking medications, individual patients should be advised of possible side effects and adverse reactions. If there are alternatives to the drug therapy, patients should be informed of options so they can consider costs, side effects, and the effectiveness of the drugs. Tolerance to drugs, and psychological and physiological reactions to them, are major determinants of effective use and compliance.

By providing more comprehensive information on self-care management of health problems, health professionals can reduce reliance on medical care services and help contain costs.

9.2 Drug Utilization Review

Drug utilization review is one form of quality assurance of drug therapy which can improve the health of the public generally and individually. Our endorsement of reviewing drug treatments is based on the desire for more effective prescribing. Patient care should be given priority attention in a utilization review, which will allow problems of over-and underprescribing, as well as malprescribing, to be addressed.

Increasing attention is being given to drug utilization review as a technique for evaluating effectiveness, costs and quality of drug prescribing. It also offers a method of promoting cost-effective drug therapy without sacrificing quality of care.

The literature is replete with articles and reports dealing with one or another aspect of drug utilization review. Many of them are purely descriptive; while they reflect the "state of the art" on drug utilization review, they seem to lack the theoretical basis upon which an appropriate process could be widely established. Importantly, virtually all fail to use a demonstrated effect on health as the major dependent variable of interest. Therefore, the goal of drug utilization review is to improve the **quality of patient care** through prescription and use of appropriate drugs, when their use, based on sound medical judgement, is indicated and when the cost associated with measurable effect on the health of individuals or groups of patients is acceptable.

Drug utilization review world-wide takes many forms—and is often interpreted to mean different things. We will not review these; far too often, the systems are set up to monitor cost with the standards of "care" being defined in dollars saved rather than in lives saved or health improved.

A drug utilization review must include information on four interrelated items. These are the **drug** (therapy), **patient** (diagnosis), **physician** (prescriber), and **pharmacy** (dispensing record.) At present, Ontario has no capability to conduct such drug utilization review. The Ontario Medical Association (OMA) has stated that it is willing to take the lead in developing demonstration systems at the local level that might be more generally applied.

Drug utilization monitoring must be linked to an audit of the patterns of prescribing. Physician peers and experts prepare relevant (e.g. local, national, etc.) auditable standards of rational prescribing for selected drugs and drug classes. An audit, using pre-agreed standards, then provides a way of identifying unacceptable deviations in prescribing practices. Information feedback strategies to individual physicians are coupled with general and targeted educational manoeuvres.

Specific programs can be developed to examine patient outcomes in target populations (e.g. institutional patients) and for target drug groups (e.g. neuroleptics) of special concern. The focus and duration of monitoring and audit can be varied, but preferably it should continue for a period which is sufficiently long to establish the effectiveness of each feedback and each step taken— educational or otherwise—to modify drug use. Typically, this may be for up to one year.

Extensive evidence exists that local and national drug utilization monitoring systems linking the drug and its actual use are essential if quality drug use is to be achieved (e.g. British Columbia Pharmacare, [Canada]; Medicaid Management Information Systems [U.S.A]; Prescription Prescribing Authority [U.K.]. Many existing drug utilization monitoring systems, some quite small, can be used for this purpose. Local decentralized approaches are very desirable since they are more readily accepted and usually address real problems in a local setting. The accepted standard should be set by peers and experts.

With the advent of more comprehensive health care, the financial dimension of rational prescribing arises more and more. The extensive involvement of governments, insurers and health care administrations in drug distribution and use emphasizes the financial aspects of pharmacotherapy. Often drug utilization systems are concerned only with cost reduction. In such systems, standards for prescribing and determining interchangeable products are often formulated by health administrators and have little to do with quality patient care. Finally, compliance with guidelines should not substitute for direct measures of health status and outcome in patients.

Appropriate drug utilization review should improve patient care. It will, coincidentally, also prevent waste and save money.[10]

9.3 The Committee therefore recommends that the Ministry of Health, in conjunction with Council of Faculties of Medicine, take the lead in developing, by 1992, pilot drug utilization review programs that can become an important part of continuing medical education. The goals of these projects would be to determine practical and effective ways of improving the quality of drug prescribing and the health status of patients. Such projects should be supported financially, at arms length, by the province. (See also recommendation 4.6.)

An acceptable definition of what constitutes a medication error should be established. This will be necessary for effective drug utilization review.

9.3 Adverse Drug Reaction Reporting Program

An adverse drug reaction reporting program is an important part of post marketing surveillance. In Ontario, an adverse drug reaction program was established in 1981, initially with federal government support. Reports are acknowledged, reviewed by a multidisciplinary committee, used when appropriate in the preparation of "The Drug Report," and forwarded to the Bureau of Prescription Drugs in Ottawa. Drug manufacturers are also informed when appropriate. It has been successful[11] and is currently continued as a public service by the OMA. However, economic restraints are threatening the continuation of the program.

[10] Carruthers, G., I. Goldberg, H. Segal and E. Sellers. "Drug Utilization Review: A Comprehensive Literature Review." Toronto, Ontario, 1987.
[11] Gowdey, Charles W. and Michael Brennan. "Addressing Drug Reaction Reporting Program of the Ontario Medical Association: the first three years." *Canadian Medical Association Journal*. 132(1):19-23, 1985.

Some method of funding an adverse drug reaction program, other than the charity of one profession, seems appropriate in 1990 in Ontario.

The OMA drugs and pharmacotherapy committee reports pertaining to the adverse drug reaction reporting program are based largely on information submitted on adverse drug reaction reporting forms. Each report describes a clinical event that took place in association with the administration of one or more drug products. These reports represent suspected adverse drug reactions, since an absolute cause-and-effect relationship is difficult to establish. As the total number of drug products prescribed is not known, and not all adverse drug reactions are reported, this information cannot be used to estimate the true incidence of adverse drug reactions.

Ideally, the OMA committee would like to be notified of all suspected adverse drug reactions, whether the reaction is well recognized, previously unreported, potentially serious or relatively minor.

The importance of reporting severe untoward effects is obvious, but minor adverse reactions can also be indicators of significant morbidity. The receipt of reports of well known or relatively minor events can assist in the identification of possible predisposing factors, or perhaps highlight a widespread prescribing problem, the recognition and publication of which may lead to improved pharmacotherapy. Two categories are particularly important. The first involves all suspected adverse reactions to new drug products. The second includes all reactions to drug products that are suspected of affecting the course of a patient's management, including reactions suspected of causing death, danger to life, birth defects, admission to hospital, prolongation of hospitalization, necessity for increased investigation, and cessation or limitation of productive activity.

Problems suspected to be the result of drug interactions, altered patient response associated with drug product substitution, or suspected deficiencies in the quality of drug products, should also be reported.
Adverse drug reactions can be reported to the OMA by using standard reporting forms available from the OMA office or, if more convenient, on the practitioner's letterhead. Alternatively, reporters outside area code 416 may use the OMA's toll-free telephone line (1-800-268-7215) or FAX machine (416-963-8819) to transmit the details of a suspected adverse drug reaction. Start-up materials are available from the OMA office to assist hospital personnel in the introduction of adverse drug reaction reporting procedures in their institutions.

Suspected adverse drug reactions may be reported by all health professionals, including physicians, nurses, pharmacists and dentists, as well as medical technicians and medical records personnel.

A major problem with all adverse drug reaction reporting is the "tip of the iceberg" phenomenon in which only a small proportion of the adverse drug reactions that occur are actually reported. The Committee noted that in Ireland adverse drug reaction reporting was stimulated and increased 50 fold by paying a small fee for such reports.[12]

9.4 The Committee therefore recommends that an Ontario adverse drug reaction reporting program be continued and that it should be supported by the province.

[12] Feely, J., S. Moriarty, P. O'Connor, "Stimulating reporting of adverse drug reactions by using a fee," *British Medical Journal*, 300:22-5, 6716: 1990.

There is much merit in continuing the present OMA program with MOH involvement along the lines of the very successful collaborative laboratory proficiency testing program.

9.4 Misuse and Abuse of Prescription Medications

Broadly speaking, misuse of prescription medication is inherent in any use which is not in accordance with the directions and uses for which the drug is authorised or intended. This section of the report focuses on that area of misuse which is better termed abuse, including intentional incorrect usage. As we use the term, abuse implies some sort of illegal or dangerous use, and includes the use of prescription medication in addictive situations. Abuse represents a specialized area of non-compliance, which involves the risk of negative clinical consequences and where the outcome can even be life-threatening. It requires solutions which deal with more than just misunderstanding or miscommunication.

The majority of the problems which have been the subject of research and discussion have involved mood-altering drugs, generally termed psychotropics. Included are most of the medicines which affect the central nervous system: barbiturates (highly addictive and not commonly prescribed now as sedatives), narcotics (even more addictive and generally used only for the control of severe pain); the major tranquillizers (anti-psychotics); anti-depressants; amphetamines (stimulants and appetite suppressants); and benzodiazepines (the so-called minor tranquillizers). The benzodiazepine products and the barbiturates are also referred to as the sedative/hypnotic group. Because of their sedative effects, some antihistamines also fall within this group. The psychotropics which are most commonly abused are barbiturates, narcotics, benzodiazepines and amphetamines.

There are also abuse problems associated with drugs for other kinds of behaviour difficulties, such as diuretics, laxatives and emetic drugs which are used by persons with eating disorders. However, with the exception of the stimulants, most of those abused substances are over-the-counter medications and, strictly speaking, lie outside the mandate of this Inquiry. A final area of abuse involves substances—most notably anabolic steroids—taken to enhance athletic performance and improve physical appearance.

9.4.1 Mood-altering Drugs

Much of the information contained in the following description of the problem as it exists in Ontario with respect to misuse and abuse of psychotropic drugs comes from the brief presented to the Inquiry by the Addiction Research Foundation.[15]

The use of prescribed psychotropic drugs has potential negative clinical consequences, including adverse drug reactions and interactions, use for non-medical purposes, overdosage, and the major problem of development of drug dependence. These consequences are, of course, not inevitable but the risk/benefit equation is often unfavourable. The health hazard inevitably associated with the use of these products contributes to great human misery, to increased health care costs, and to increases in crime and social disruption.

[15] Addiction Research Foundation of Canada, Clinical Problems Associated with the Use of Prescribed Psychotropic Drugs, November 3, 1988.

9.4.2 Dependence on Drugs

One of the major areas of concern surrounding the use of psychotropic drugs is the dependence upon them which frequently develops; individuals who have had medication prescribed for a long period of time for the legitimate treatment of symptoms or conditions are particularly at risk. Symptoms include anxiety, panic attacks, depression, insomnia and chronic pain. Generally, the drugs involved are the minor tranquillizers, sedatives/hypnotics and the opiates. Statistically, this population group is largely middle-aged, although there is an important sub-group composed of elderly patients who may get these prescriptions from more than one physician, and who are at particular risk for adverse drugs effects because of their age-related increased physiological and central nervous system sensitivity.

A second large group of individuals which may become dependent upon this group of drugs are persons who are also dependent upon alcohol. The physicians who prescribe these products for symptoms associated with alcohol abuse may or may not be aware that the patients' symptoms or problems are alcohol-related. The result is cross-dependence involving both alcohol and drugs.

Finally, there are individuals who use these drugs for non-medical purposes, obtaining them directly from physicians or on the street. Sometimes these persons use the prescription medication as their abused 'drug of choice'; sometimes prescription drugs are used as substitutes when illegal drugs are not readily available.

Overdose problems occur most commonly among members of these three groups of chronic abusers of prescription medication. There are, however, the additional problems of suicide attempts by individuals who are not chronic users, and of accidental ingestion, usually by children.

Factors Contributing to Abuse

9.4.3.1 Levels of Use: There is a direct connection between the levels and types of medication being prescribed in a community, and the level of prescription drug abuse.[14] The risk of abuse is therefore higher in those groups which have higher utilization rates of drugs legitimately prescribed by physicians and dentists. The results of Canada's Health Promotion Survey[15] reveal that sleeping pills and tranquillizers are used at higher levels by older individuals; the use of sleeping pills increases sharply with age, with one in five Canadians 65 and older having used them within the 12 month period prior to the survey.

Usage levels are also higher among older women (23 per cent), francophone women (14 per cent), retired men (20 per cent), retired women (21 per cent), women keeping house (12 per cent), and people in the lowest income category (13 per cent). Although tranquillizer use is generally lower than sleeping pill use, the same groups are generally the high users of both. For example, 12 per cent of people 65 and older use tranquillizers, as do 13 per cent of francophone women, 14 per cent of retired women and nine per cent of retired men. Of larger concern is the high level of recorded combined use of both sleeping pills and tranquillizers, used by 8 per cent of retired persons, 9 per cent of separated or divorced women, and 8 per cent of widows.

14 Busto, U., et al. "Psychotropic Drug Utilization in Canada: Implications for Drug Abuse Liability."
15 *Canada's Health Promotion Survey*, Health and Welfare Canada, 1988.

There is reason for great concern about the group with the highest utilization rate: the elderly. "Although psychotropic drug use among the elderly living outside institutions does not appear to be a significant public health problem, evidence suggests that once a person in this age group begins to use a psychotropic drug, there is a reasonable chance of misuse—that is, of long-term continuous use."[16]

"Analysis of users of anti-anxiety drugs revealed that long-term use (defined as regular daily use for a year or longer) was relatively rare, occurring among 15 per cent of all such users...only 1.6 per cent of all surveyed adults...18...[to] 79...."[17] but "A third of all the long-term users were 65...or older," and in terms of general use of psychotropics "in the group 65 years and over, female use exceeds male use by almost 60 per cent."[18]

Other identifiable groups are also at high risk of abuse because of the high levels of prescribing. These include the chronically ill, the majority of whom are also elderly. In a study of a group of chronically ill elderly, it was found[19] that about one quarter were prescribed psychotropic drugs, and 27 per cent of that quarter were on two or three of them simultaneously.

9.4.3.2 Consumer Demand and Social Expectations: Consumers view psychotropic medications as they do other prescription medications: with the belief that there is a pill for every ill. Many in our society do not believe that they should put up with any symptom if relief is available, even if the relief is of short duration and the risk of long term drug dependence is high. It has become almost axiomatic that if one is in emotional or physical pain or distress, relief should be available, often in the form of a pill. As consumers become more knowledgeable about psychotropic drugs, they are demanding specific forms and types of therapy for their own and relatives' ills.

A Health and Welfare Canada publication put the problem this way: "...we question whether many of the problems of living presented to physicians can be addressed by the health care system at all. Although recognising the value of benzodiazepines in short-term care, their use poses serious questions regarding interference with individual's abilities to alter their lives and thus cope with stresses without the aid of chemicals.
"Given the large number of Canadians currently using benzodiazepines, the possibilities of impaired decision-making, decreased learning skills, released aggression and impaired ability to empathise have a significance extending beyond the lives of these individuals to the community at large."[20]

9.4.3.3 Pharmaceutical Manufacturers: Manufacturers understandably want to sell their products and a major marketing strategy involves identifying all potential uses for a product and convincing physicians to prescribe their products specifically for each of those uses. The result of this strategy in the area of psychotropic medications has been the extension of their use, legitimately or not, to "solving" the stresses of life. Unfortunately, this type of prescription "solution" rarely does more than provide temporary or inadequate relief. In the worst situations, the problem of drug dependence is added to the problems of living for which the drugs were taken in the first place.

16 Lipton, H.L., "Drugs and the Elderly: Clinical Social and Policy Perspectives, *Stanford University Press*, 1988.
17 Ibid. p.30.
18 Op. cit. p. 32.
19 Achong, M.R., J.R.D. Bayne, L.W. Gerson, S. Golshani, "Prescribing of Psychoactive Drugs for Chronically Ill Elderly Patients," *Canadian Medical Association Journal*, 118(12): 1503-08, 1978.
20 Health and Welfare Canada, "The Effects of Tranquilization: Benzodiazepine Use in Canada."

9.4.3.4 Physician Prescribing: Physicians' prescribing patterns depend upon various factors, including their age and the prescribing views which predominated during the period of their medical education (see chapter 7). They are also influenced strongly by the contacts they have with manufacturers' representatives, by their colleagues, and by their patients. Physicians may succumb to the pressure to give patients some sort of assistance, even if the result is an unwisely-prescribed psychotropic drug. "As patients bring more and more psychosocial problems to the physician, there is need for both physician and patient to have these problems considered as legitimate medical issues."[21] However, the Inquiry believes that alternatives to drug therapy should be given priority.

Patients who abuse drugs and/or participate in illegal diversion of drugs are often also expert at feigning legitimate medical problems. There are, finally, always some few physicians who are willing participants in this illegal prescription drug traffic, whether for financial gain or because they have substance abuse problems themselves. Prescribers who inappropriately "self-medicate using narcotics or controlled drugs can have their prescribing privileges suspended."[22]

9.4.4 Illegal Use of Prescription Drugs

In addition to the unfortunate abuse of addictive medications through the carelessness, negligence or even collusion of a small number of prescribers, there is a growing problem related to the illicit diversion of prescription drugs. The Royal Canadian Mounted Police (RCMP), the Ontario Provincial Police (OPP) and the Metropolitan Toronto Police all report an increase in the number and type of prescription drugs diverted for street sale and illicit use.

"National trend indicators point to a serious and escalating problem of diverted licit pharmaceutical drugs from medical sources which has brought heightened concern to law enforcement authorities across the country."[23] "Drugs are diverted in a number of ways: break and entry or armed robbery; transit losses; fraudulent prescriptions; multiple doctoring; excessive or inappropriate prescribing by practitioners; personal use by health care providers; etc."[24] The RCMP indicate that illegally obtained street pharmaceuticals are increasingly coming from sources such as double and multiple doctoring,[25] and through the active participation of a small segment of the medical community.

The Bureau of Dangerous Drugs of Health and Welfare Canada has estimated that in 1987, 500,000 pills were illegally obtained in Ontario through theft, robbery, forged prescriptions and unexplained losses. The street value of these drugs has been estimated at $5.5 million. The illegal or unethical use of prescription drugs—particularly anabolic steroids—in sports has been the focus of the federal commission headed by Dr. Justice Charles Dubin. Testimony before the Dubin Commission, and information received by this Inquiry from the RCMP, confirm that anabolic steroids are readily accessible in sport and fitness facilities, and have been in widespread use in both amateur and professional athletics. They are distributed illicitly, having been imported from other countries, illegally manufactured in Canada, or illegally diverted from stocks held by pharmacists and physicians.

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21 "Controversies in Therapeutics," Monograph, Philadelphia: Saunders, 1980.
22 Brief #161-5000, Royal Canadian Mounted Police (The Commissioner).
23 Ibid., brief #161-5000.
24 Health and Welfare Canada, brief #171. This submission also expresses the concern that quantities per theft incident have been on the increase because pharmacies are carrying larger quantities of narcotic drugs in their inventories.
25 Health and Welfare Canada indicates a five-fold increase in convictions for double doctoring over the past five years.

Another problem identified by the RCMP is the clandestine manufacture of pills, specifically intended for street use, which are designed to resemble familiar legal drugs, such as varieties of diazepam (i.e. valium) and methaqualone.

Federal, provincial and municipal police forces are attempting to cope with this problem by focusing on both the demand and supply factors. Traditional police activity is directed to reducing supply. In the short run, this is the best way of restricting the illegal use of drugs, but its limitations are obvious. Vigorous police activity in many countries has failed to halt the increase in this dangerous activity. In Ontario, the illegal use of prescription drugs is largely, though by no means exclusively, an urban phenomenon. As might be expected the problem is greatest in the Metropolitan Toronto area. Accordingly, the Metropolitan Toronto Police force is currently expanding the number of officers assigned to drug squads and a prescription squad is being established.

Stonehenge Therapeutic Community, which treats substance abusers, including those who abuse prescription medication, made four observations: "1) Double or multiple doctoring is a common practice among substance abusers. 2) The female substance abuser is more likely to employ double doctoring and prescription forgeries to illicitly obtain licit drugs than is the male addict. 3) There is an apparent lack of awareness concerning double doctoring among some physicians combined with a complacency concerning the security of prescription pads and drug storage units. 4) Due to the covert nature of illicit pharmaceutical drug abuse and the possible judicial repercussions to the abuser...present statistical information is inadequate, under-reported and tends to minimize the actual frequency of double doctoring occurrences in this province."[26]

Recommendations from the Metro police regarding prescriptions included utilization of non-photocopiable paper for prescription pads, writing prescriptions in full, using both numerals and written amounts to avoid changes, numerical coding and indexing,[27] triplicate prescriptions for "at risk" drugs, and provision of a telephone listing of doctors to enable pharmacists to run quick checks. With respect to thefts and break-ins, they recommend installation of cameras and alarms, vaults for narcotics, increased safety standards for pharmacy licensing, and visible posting of security measures. With respect to education, they recommend ongoing liaison among the police, the College of Physicians and Surgeons of Ontario and Health and Welfare Canada, programs to demonstrate identified "scams" to physicians and pharmacists, and accountability for prescription pads. Stonehenge made a similar recommendation with respect to the education of health care workers on the specific "scam" of double-doctoring, and called for greater accountability, particularly with regard to prescribing and dispensing of psychoactive substances.

The RCMP also recommended prevention, achieved through education and increased awareness: "Law enforcement prevention/training programs directed to law enforcement agencies, physicians, pharmacists, health administrators and other relevant parties involved in active or potential intervention, should address such issues as: defining the nature and extent of the diversions problem; identifying factors which encourage and foster dependence and the misuse of pharmaceutical drugs; the phenomenon of displacement to other drugs (i.e. the connection between heroin availability and

[26] Stonehenge Therapeutic Community brief #77.

[27] This was also the recommendation the OPP submission, which suggested sequentially pre-numbering prescriptions so they could be traced from the physician through to the patient and finally to the pharmacy. Sequential numbering allows pharmacists to be alerted if a numbered pad of prescriptions has been stolen. The OPP also made recommendations about non-photocopiable paper, alarms, and physician and pharmacy education about scams.

abuse of diverted pharmaceuticals); double/multiple doctoring; and the development of prescription user profiles. Of course, it is without question that primary prevention must include educating youth and parents alike on the potential dangers and repercussions that may result from the misuse and abuse of licit pharmaceuticals."[28]

Metro police recommended that examples of specific active prescription forgeries be published and distributed to all pharmacies in an area, perhaps through local newsletters. The OPP recommended stiffer penalties for double doctoring and selling Schedule F drugs.[29]

Many groups[30] encourage the increased education and awareness of physicians about community drug treatment resources. The Bureau of Dangerous Drugs of Health and Welfare Canada recommended pooling of relevant prescribing and utilization information, education of practitioners about drug abuse, and development of methods to deal with the problems associated with large inventories of psychoactive drugs. However, all three police forces believe that only measures that reduce demand will prove to be significantly effective in the long run. For example, the Metropolitan Toronto Police force has also decided to assign more officers to community drug education programs.

This Inquiry agrees that the objective must be a change in public attitudes toward drug use. Clearly, however, responsibility for educating the public, and especially young people, regarding the dangers of misusing and abusing drugs cannot be assigned primarily to the police. Vigorous, ongoing public education programs involving our schools, the media, our three levels of government, industry, labour and community groups, are required. It is as important to persuade the public not to take powerful medications needlessly as it is to persuade people not to smoke. Indeed, the success of anti-smoking campaigns in changing public attitudes provides reason for hope that a similar effort directed against the abuse of drugs might be effective.

9.5 The Committee therefore recommends that the governments of Canada, Ontario and the municipalities set up appropriate mechanisms, properly funded and supported, to reinforce the social unacceptability of drug abuse.

9.4.4.1 Prescription Forgery and Fraud: Some prescription drugs, especially narcotic and mood altering medications, have significant resale value on the street. Such illicit use of prescription drugs can be minimized by the use of an innovative "triple prescription system" like that in use in Alberta. We are not persuaded that the cost of such a program in Ontario would be justified by the advantages. We believe that many of the benefits can be obtained when prescribers and patients are each identified by a unique identifier, as we had recommended in an interim report. Both patient drug profiles and prescriber profiles will then be available. Out-and-out forgery seems relatively rare, but clearly prescription pads need to be kept in reasonably secure places.

9.4.4.2 Prescription Drug Addiction: There is evidence to support the widespread perception that hypnotics and sedatives are over prescribed as judged by the content of very many organizational and individual submissions to the Inquiry. Many submissions made the point that this was a particular problem for the elderly.

It is very easy for prescribers to start hypnotic, sedative and tranquillizing drugs but it may be very hard for patients to stop them. Expensive and distressing confusional states, depression

[28] Royal Canadian Mounted Police brief #161.
[29] The Food and Drugs Act and Regulations, with amendments to April 1, 1977. This is the schedule containing prescription drugs.
[30] Stonehenge Therapeutic Community, brief #77.

and falls are all too often the result. Psychological and sometimes physical dependence occurs all too often. The Inquiry was very impressed by a simple and effective way of dealing with this problem that was presented to us in Ottawa by Dr. Cohen, a family doctor. His approach is positive and non-judgemental and involves requesting second opinions prior to prescribing sedatives for long-term use.[31] Review of sedative use is, of course, part of the general review of treatment that should be a routine part of rational pharmacotherapy (see chapter 7). Clearly prevention is better than treatment and the Committee suggests (see recommendation 11.5) that prescriptions for hypnotics, sedatives and tranquillizers be for the shortest possible time and be clearly marked "no repeats."

We recognize that in rare instances patients with severe, long term anxiety states may require long term sedation.

9.6 The Committee therefore recommends that the Ontario Medical Association, the College of Family Practice and the Addiction Research Foundation should jointly research the various approaches to reducing the overuse of hypnotics, sedatives and tranquillizers.

9.5 Nursing Homes and Homes for the Aged

In 1988 there were 181 homes for aged persons with 28,870 beds. The beds are divided into two categories, residential care (13,630 beds) and extended care (15,240 beds). Extended care is for aged persons who require at least 90 minutes of skilled nursing per day.

There are 264 nursing homes in the province with 24,800 beds. The issues and problems in pharmaceutical services are discussed in the context of nursing homes, but they apply as well to homes for the aged.

There are two sources of drugs for patients in the homes: non-prescription drugs are ordered in bulk through Government Pharmacy and kept in stock in the nursing home; medications prescribed by the patients' physician are dispensed in a pharmacy and delivered to the home. The costs of the drugs are paid directly by the ODB.

The Ontario Nursing Home Association (ONHA) submitted a brief outlining the issues and problems related to drug therapy for patients in nursing homes. The process involves the following steps: physicians' orders, medication ordered through pharmacy, receipt of medications including the recording of information in a drug record book, administration of medications, reordering of medications, preparation of medications for leave of absences, the handling of narcotic drugs, medication review, and the destruction of medications. Nurses are generally responsible for the administration of medication. The number of beds per registered nurse ranges from 60 to 80. The ratio of residents per physician ranges from 10 to 50, with most physicians having only one or two patients per facility. The drug utilization rate on average ranges from six to eight drugs a day; half of these are non-prescription drugs. Most prescriptions are re-ordered monthly by the physician. The major thrust of the brief involved the time and responsibilities of the nurse for managing the medications in the nursing home.

[31] Council on Aging of Ottawa-Carlton, brief #118-5100; Dr. Cohen made a presentation in Ottawa at the public hearing.

In 1986, the College of Nurses of Ontario and the Ontario College of Pharmacists jointly struck the task force on provision of medications by health care services. The report differentiated between dispensing and administering drugs. The dispensing function was thought of in terms "of removing medication from a labelled container and placing it in another properly labelled container for distribution to a patient." Administration is the act of removing the drug from the labelled container and administering it to a patient. The Health Disciplines Act requires that dispensing must take place in an accredited pharmacy. However, public hospitals, nursing homes, homes for the aged, and other residential care facilities are exempt from this regulation. Even though it is not part of the scope of practice for registered nurses to dispense drugs, there are no legal barriers to dispensing drugs in health or custodial institutions. The task force recommended that the dispensing of drugs in facilities be reconsidered. It recommended that wherever possible the pharmacist be responsible for the dispensing functions. Where pharmacists are not available, it recommended that registered nurses dispense drugs in accordance with policies and procedures set out by a pharmacy and therapeutics committee.

Nursing homes and homes for the aged do not have pharmacists on staff; they obtain services from pharmacies in the community. Pharmacy payments can be organized through three mechanisms of payment. Shoppers Drug Mart, which provides services in long term facilities, provided an analysis of its experiences with the various payment mechanisms. It provides two categories of services: packaging and distribution and clinical consulting.

Drugs have to be packaged for simple, accurate and safe administration, such as the carded dosage system. The staff of the homes prefer to have the non-prescribed drugs packaged along with the prescribed medications, even though most of these drugs are obtained from Government Pharmacy. Distribution involves delivery, after-hour service, and special equipment to facilitate distribution such as medication carts and facsimile machines which they provide for the facilities.

Clinical consulting activities include entries in the drug record book, drug reviews for the residents, in-service education for residents and staff, monitoring of the drug distribution system, quality assurance inspections and audits, participation in drug and therapeutics committees, conferences with physicians and nurses, and the destruction of surplus drugs. Shopper's Drug Mart estimates that good clinical consulting results in an average reduction of 0.7 drugs per day per resident. Based on experience, it has found that the average number of prescriptions per resident is 4.4 in facilities with clinical consulting and 5.4 in facilities without clinical consulting. It also points out that under the ODB, there is no compensation for these activities above and beyond the dispensing fee.

The reimbursement systems for long term care facilities vary by province. Pharmacists in British Columbia and Manitoba are reimbursed for the acquisition cost of the drug and a capitation fee per month for each long term care bed served. In British Columbia there is a sliding scale based on the size of the facility. The fee is $25.50 per bed for facilities with fewer than 200 beds, which decreases to $14 per bed in the largest facilities, which have 800 or more beds. In Manitoba, the standard fee is $24.50 per bed, regardless of the size of the facility. Chronic care facilities in Metropolitan Toronto pay a capitation fee of $30 per bed per month for pharmacy services.

In the other provinces pharmacists receive reimbursement and a standard dispensing fee, and all provinces, save Prince Edward Island and Nova Scotia, allow for a mark-up on the cost of the drugs. It is the contention of Shopper's Drug Mart, and other pharmacists presenting information to the Inquiry, that the

dispensing fee neither includes the cost of packing the drugs purchased through Government Pharmacy, nor the consulting activities. They believe that the rate of return on pharmacy services for long term care facilities is unacceptably low. It is their contention that pharmacists serving long term care facilities subsidize the value-added services from other earnings. Shopper's Drug Mart proposed that a $4 consulting fee per bed per month should be added to the reimbursement scheme for pharmacies serving long term care facilities. In the preceding chapter, the Inquiry recommended (8.16) that payment mechanisms be examined which would reward the provider of pharmaceutical services and be independent of the status or dispensing of a drug. The payment mechanisms for pharmacists who serve long term care facilities should be examined and reconsidered.

The co-operation and active participation of physicians and nurses are required for the pharmacy consulting services to be effective. Consulting pharmacists free the nurses of time and responsibilities in the administration of medications, so there are incentives for the nurses to be involved. From the discussions with nursing home staff and pharmacists, it appears that it is more difficult to gain the active participation of physicians on drug and therapeutics committees in long term care facilities than in acute care hospitals. It should be noted that physicians are not paid for committee participation and other activities directed toward the improvement of quality of care. Physicians may feel less inclined to contribute time when they have only one or two patients in the facility, as is the case in most instances. As noted in recommendation 8.19, pilot projects for drug therapy committees should be tested for long term care facilities.

Surplus prescribed drugs are those in containers labelled with the name of a resident whose drug therapy has been changed, who has died, or who has been transferred or discharged from the long term care facility. The nursing home regulations permit the reallocation of previously dispensed drugs within the home and set out labelling and other requirements for this process. This procedure must be on the direction of a prescriber and under the direct supervision of a prescriber or pharmacist.

The administrative costs of reallocation are high. The costs and savings of this policy are unknown. The task force on provision of medications by health care facilities considered these issues and called for a complete study of the cost and benefits of reallocation of drugs. To the best of our knowledge, their recommendations were not acted upon.

Legislation in Ontario prohibits the return of drugs to the pharmacy to be recycled, packaged and dispensed. Recycling of drugs is permitted in British Columbia and Manitoba. It is the contention of Shopper's Drug Mart that the recycling of drugs in the pharmacy would save time, money, and reduce the amount of drugs that have to be destroyed.

The regulations provide for the destruction of surplus drugs under proper supervision. In a study of three facilities by Extendicare in 1986, the average annual cost of drug destruction was $39.34 per resident. Shopper's Drug Mart estimated that 25 per cent of the consulting pharmacist's time was spent supervising the destruction of drugs.

Pharmaceutical services are a vital part of the services provided in long term care facilities. The patients are old, have major health problems, and frequently are unable to manage their own medications. As noted, they take a number of drugs daily. Questions have been raised about the adequacy of current policies and mechanisms for assuring that drugs are prescribed and dispensed appropriately. These issues are addressed in chapter 11.

9.6 Special High Risk Groups

There are persons with particular diseases, disabilities or conditions that require expensive and prolonged drug therapy. Some of these special problems are currently being addressed by specific provincial drug plans, such as the cost of antituberculous medication, cyclosporin for transplant recipients and AZT for AIDS sufferers. The Inquiry considered two groups with high cost drug therapy for life-extending drugs whose costs were not covered by a drug plan: those suffering from cystic fibrosis and from thalassemia. There are other high risk groups whose drug costs are basically covered but who may be at risk with respect to the quality of care they receive. Two such groups are psychiatric patients and residents of long term care facilities.

9.6.1 Cystic Fibrosis and Thalassemia

Cystic fibrosis (CF) and thalassemia are both inherited genetic disorders which require ongoing treatment; costs for drug therapy differ from individual to individual, but generally are very high. As a result of scientific advances, life expectancy and quality of life for sufferers from these conditions have been increasing over the past few decades. For example CF patients now have an average life expectancy in their mid-twenties, whereas it was only four years in 1958. This recent increase in life expectancy has resulted in the anomalous situation of adult patients being treated at clinics that until recently were located only in children's hospitals. For the most part, existing programs for the chronic treatment of these conditions are limited to persons under 18, since few or none of the patients lived beyond this age until recently.

Life-preserving drug therapies for these conditions have become more effective, but also more costly. Further, because of increased effectiveness, more treatment can be given on an out-patient basis. One result of these trends is that clinics in children's hospitals have been transferring these costs to the patient and the patient's family, or to general hospitals which have no funded programs for these conditions. There has also been inconsistency in the way drug therapy costs are borne across the province on a patient-to-patient basis.

The Committee finds it unacceptable that access to needed drugs for these persons depends upon their financial status, and believes that access should be guaranteed without the imposition of excessive financial hardship. The affected person or family should not have to prove financial need in order to receive a life-preserving benefit. The Committee therefore made the following interim recommendations:

9.7 That drug products and other medically indicated drug-related therapy (such as necessary enzymes and vitamins) used in the treatment of cystic fibrosis be funded as benefits under the appropriate Ministry of Health program.

9.8 That drug products and medically-related supplies used in the treatment of thalassemia be funded as benefits under the appropriate Ministry of Health program.

As is the case with the previous recommendations, the Committee did not recommend the specific procedures by which these recommendations were to be implemented.

The number of Ontario residents affected by these recommendations is very small. There are approximately 860 CF patients now in Ontario, of whom about 300 are over 18 years of age. The estimated incidence is one in every 5,000 births, or 25 new cases of CF per year. There are approximately 125 diagnosed thalassemia sufferers in Ontario, 25 per cent

of whom are over 18. The incidence is one in every 20,000 live births, or roughly seven new cases per year.

While the cost of drug products, medically indicated drug-related therapy and medically-related supplies varies from person to person, a cost estimate of approximately $25,000 per year for thalassemia sufferers and $2,500 for CF sufferers seems to be reasonable. It is highly likely that new drug therapies to further increase life expectancy and quality of life for these persons will be introduced, and these can be expected to be very expensive. Unless these new drugs also prove to be useful for other more common problems, their costs will not fall much over time because few economies of scale will come into play and they are likely to remain single source drugs.

At the estimated annual cost of approximately $25,000, it would take just over $3 million each year to provide the estimated 125 thalassemia patients in Ontario with all the required materials, with a quarter of the costs being for adults over the age of 18 years. However, because not all patients comply with recommended drug therapy, and because some are already receiving benefits from the Ontario government, the increase in the MOH budget will likely be less than the $3 million.

There are wide variations in the costs of formulary and non-formulary drugs for CF patients. We have received estimates from a number of sources which ranged from just over $2,000 per year to about $8,000 per year. It may well be that the costs of the medications and nutritional supplements are greater for adults than for children. Assuming that the average cost per patient was $2,500, the projected costs for coverage would be $2,150,000. Again, this does not represent an absolute increase in the costs to the MOH, in that about 30 per cent of the patients in the Hospital for Sick Children clinic are already covered under the ODB plan. If this percentage holds true for all 860 patients in Ontario, then $645,000 of the estimated annual amount is currently covered by the ODB program.

Many emotional and social benefits would result from the implementation of these recommendations. Not only would the patients and their families be relieved of the emotional burden that accompanies financial hardship, many people who are otherwise able to work would no longer be forced to rely on welfare to pay their drug bills. This should result in a small reduction to the overall provincial budget due to the removal of these individuals from the ranks of welfare recipients, as well as a boost to the independence and self-esteem of affected persons.

9.6.2 Psychiatric Patients

In 1988 the 10 public psychiatric hospitals in Ontario had 4,831 beds and 10,781 patients were discharged from care. There were 65 general hospitals with 2,229 beds in psychiatric units, and 38,868 patients were discharged from these units during that year. In addition, there were eight other psychiatric hospitals with 1,003 beds and 6,811 discharged patients. No estimates were available of the number of chronically mentally ill persons under physician care in the community, or of those with emotional problems who were in hospital but were admitted with other than psychiatric diagnoses.

There are three issues related to drug care in psychiatric units: 1) chemical treatment of patients who were legally determined to be mentally incompetent to make decisions; 2) informed consent for treatment; and 3) drug coverage for psychiatric patients in the community. The psychiatric patient advocate office was introduced as a quasi-legal program of the MOH, and there are offices in each of the 10 public psychiatric hospitals; they counsel about 62 per cent of the patients.

In 1987/88, there were 423 patients judged incompetent to consent to or refuse treatment. Incompetent patients have little choice in the treatment they receive. Other patients in the public psychiatric hospitals are to be fully informed about proposed therapies and consent to the treatment that is prescribed. Most of the pharmacies have unfilled positions, and neither the physicians nor the pharmacists have sufficient time to fully inform patients about the drugs recommended for treatment or to fully instruct them about the use of the medications.

About one-quarter of the counselling activities of the psychiatric patients' advocate offices pertain to the rights of the patients in therapeutic decisions. In practice, competence of the patient only becomes an issue if the patient refuses treatment. The more invasive and toxic the effects of the treatment, the more likely the patient is to refuse. Patients may have to choose between coping with the symptoms of their disorder or the side effects of the medication. If the patient is judged incompetent to make the decision, it must be determined who will represent the interests of the patient. In the case of the psychiatric patients' advocates office, the treatment staff have expressed concerns that counselling to inform patients of their rights interferes with the treatment process. The goal is for the staff and the counsellors to work together to reconcile any conflicts between rights and treatment so that the patients fully understand, agree to, and receive optimal therapy.

The costs of drugs are covered for psychiatric patients in hospital and the hospital covers the costs of drugs of their patients who attend outpatient clinics. Any patient who has been admitted into a psychiatric hospital may take a prescription for psychotropic drugs to a psychiatric hospital to have the drug dispensed. This has led to patients demanding that prescriptions for non-psychotropic drugs also be dispensed, as they are essential for their well being, and pharmacies in the psychiatric facilities have started carrying a wide stock of drugs as there are some questions as to the policy they should pursue.

Patients who obtain drugs through a community pharmacy have to have third party coverage or pay the costs themselves. If they are disabled by their illness, they undoubtedly receive social assistance and have ODB coverage. Other chronically mentally ill individuals are likely covered by the extension of the benefits under the STEP plan of the Ministry of Social and Community Services. The number of individuals who have large drug bills related to treatment, who are not covered by ODB or private health insurance plans, is unknown.

Chapter X
Alternative Therapies

While the Committee was not asked to look at alternatives to prescription drugs, a number of submissions called attention to this issue. The Inquiry does not attempt a systematic examination of alternatives but concludes that such a study, conducted in accordance with accepted scientific standards, is merited in some areas.

10.1 Alternatives to Prescription Drug Products

In 1987 three significant reports relating to health care were issued.[1] All emphasized the key roles of health promotion and disease prevention. The Evans report addressed the role of the individual consumer in making healthful lifestyle decisions. The Podborsky report called attention to the importance of adequate nutrition, exercise and recreation in promoting health, and of eliminating smoking and alcohol and drug abuse in preventing illness. The Spasoff report, in recommending health goals for Ontario, also emphasized the need to encourage behaviours that support health. Drawing on these reports and on a vast, worldwide literature that supports their recommendations, the Premier's Council on Health Strategy last year outlined strategic objectives for the province.[2] The first objective is to shift the emphasis in health care from treatment after the fact to health promotion and disease prevention.

These reports have in common an appeal to all Ontarians to look beyond the traditional health care services to what they themselves can do to remain healthy. Traditional services offered by Ontario's extensive system of hospitals, home care services, clinics and private professional offices are mostly geared to treat illness once it occurs. Increasingly, it is recognized that Ontarians have a responsibility to do what they can to protect their health and to prevent illness.

Prescription drugs do not specifically accomplish this aim. Drugs primarily help patients who are already sick or are at risk of becoming sick. Powerful drugs are especially useful for those persons who have acute illnesses or are faced with life threatening conditions, as discussed in chapter 2. However, the majority of prescription drugs are now used to treat chronic conditions, many of which do not immediately threaten life or functioning. Many drugs are prescribed for ongoing symptom relief. Yet drugs are, of course, not innocuous; the reason some require a prescription is that, as chemicals foreign to the body, they carry the risk of toxic side-effects. For example, as discussed in chapter 11, adverse drug reactions are estimated to account for or be associated with 20 per cent of hospital admissions in the elderly. Further, although many physicians rely heavily on prescription drugs to help their patients, it is estimated that 50 per cent of prescriptions are not used by consumers exactly as directed.

[1] Evans, J.R. et al. Toward a Shared Direction for Health in Ontario, Report of the Ontario Health Review Panel, Toronto, Ontario, June 1987.
Podborski, S. et al. Health Promotion Patterns in Ontario, A Report of the Minister's Advisory Group on Health Promotion, Toronto, Ontario, 1987.
Spasoff, R.A. et al. Health for All Ontario, Report of the Panel on Health Goals for Ontario, Toronto, Ontario, August 1987.
[2] Ontario Premier's Council on Health Strategy. *From Vision to Action: Report of the Health Care System Committee*. Ont. Gov't. Toronto, Ontario, May 5, 1989.

It seems important, therefore, to consider alternatives to prescription drugs when the indications for drugs are not specific and when other effective and/or safer treatment methods might help. A detailed examination of alternatives to prescription drugs is outside the mandate of this Inquiry. However, it is important to stress that alternatives do exist and, frequently, are preferable.

For example, some acute and a few chronic conditions benefit from surgical approaches or physiotherapy and other physical treatments. Often attention to psychological and social factors is most important. It is now well recognized that the distinction between the mind and the body is artificial—they are intimately connected and influence each other. Physical well-being is often threatened by emotional conflicts that are not resolved and mental health is threatened by physical illness. Professional psychotherapy, relaxation techniques, planned rest and recreation and spiritual guidance all have their place in helping many people cope with chronic health problems. The beneficial effects of regular physical activity have been demonstrated repeatedly, not only in the promotion of health but also in the management of a number of chronic illnesses. The many links between diet and disease are now frequently emphasized in news media reports and are increasingly recognized by health professionals and the public.

Although, as indicated earlier, this Inquiry was not asked to look at alternatives to prescription drugs, consideration of the subject was inevitable. A number of submissions to the Inquiry called attention to this issue and, of course, there is a large body of professional and lay literature on the dangers of thinking that there is "a pill for every ill." It is not possible in this report to attempt a systematic examination of alternatives to prescription drugs or to estimate health or economic impacts of promoting their use. However, we believe that a systematic examination, conducted in accordance with accepted scientific standards, is merited. As an example of areas that deserve more careful examination by both experts and policy makers, a closer look at the role of nutrition in health and illness follows.

The rationale for considering nutrition is the assumption that most nutritional products used in moderation have no harmful side effects; many contribute to improved functioning of the body and not just suppression of symptoms; and most are less costly than prescription drugs. A need exists for a series of studies to determine what funds could be saved by raising awareness among physicians about nutrition and nutritional products and what the benefits of nutritional treatments might be.

One case in point is the management of high cholesterol levels. The prescription drugs for high blood cholesterol are fairly expensive and have known adverse side effects, as well as potential but unknown long-term side effects. The alternative nutritional product, Vitamin B3, or Niacin, costs one-tenth, depending on the preparation. With the new time-release Niacin, the side effects of flushing and transient itchy rash have been practically eliminated although the cost is higher. The cost saving, were physicians persuaded to use Niacin instead of the newer drugs, could be millions of dollars. In the recent well-publicized study on treatment of high cholesterol, released under the auspices of the OMA and the MOH, no mention was made of the cost differential between Niacin and other comparable methods of treatment.

There are two aspects to nutrition. The first concerns **diet** and healthy eating habits; the second is **nutritional pharmacology**, which is the deliberate use of higher than normal amounts of minerals, vitamins, fatty acids, and amino acids as treatments for specific illnesses.

As mentioned, the role of good diet in promoting health and poor diet in raising the risk for some diseases is increasingly recognized. This recognition is yielding interesting information. For example, a study, entitled "Superior nutritional care cuts hospital costs," was published in 1988 by the Nutritional Care Management Institute of Chicago. Pulling together dozens of studies in numerous hospitals with thousands of patients, it concluded that just by improving the intake of calories and protein by hospital patients, the average length of stay can be drastically cut down and the cost per patient can be reduced by 50 per cent.

Bad dietary practice has been incriminated as a cause of a great many illnesses of western man: gastrointestinal diseases, cardiovascular disease and metabolic diseases were all relatively rare prior to the 1900s; diverticulosis and ischemic heart disease were uncommon until after World War II. The U.S. Surgeon General has recently emphasised that we eat too much fat, salt and sugar.

The average diet in North America today contains 18 per cent of calories in refined sugar, a further 18 per cent in refined white flour and another 17 per cent of generally synthetic or refined fats. The immense change in diet over the last 100 years, compared to the previous hundreds of thousands of years, seems to be taking its toll in the form of a wide variety of illnesses. Today's three main chronic diseases—heart disease, cancer and stroke—were much less common 100 years ago. With the huge amounts of money spent on heroic attempts to deal with these illnesses when they become acute, it would seem prudent to redouble attempts at prevention. One way to do this is to expand support for large scale long-term studies on dietary habits and their relation to illness.

In order to deal with the dietary aspects of nutrition, education of consumers, physicians and other health professionals is necessary. If Ontarians rush to see the doctor or rush to obtain a prescription with every minor complaint, it puts a terrific overload on the health care system. The signposts for future consumer education exist today in the grassroots surge to purchase books on diet and health. Governments are making attempts to bring the food companies into line by requiring proper labelling of ingredients. As yet there are no tough laws dealing with unnecessarily high sugar and fat content in the diet, although it may be that such legislation is coming. In the meantime, vigorous education of the consumer is required so that the consequences of poor dietary habits are understood.

Books are continually being published describing what could be termed "clinical nutritional medicine," in which doctors promote the nutritional approach to combat many chronic, non-life threatening diseases. These nutritional remedies, even though not sponsored by drug companies and medical organizations, are being prescribed, where appropriate, by a growing number of reputable physicians.

This awareness has not been directed top down from the regulatory authorities, the medical journals, the medical associations or the university faculties, but has been stimulated by a bottom up demand from consumers anxious to maintain or regain health without drugs. This grass roots demand is expressed in the growth of the health food chains, the modern preoccupation with diet and exercise, the awareness and interest in acupuncture and herbal medicine, the increased interest in chiropractic, the use of focused nutritional remedies and, in fact, all the realms of holistic and alternative medicine.

Increased public interest in "alternative medicine" is not abating and is a result, to a large extent, of both the failure of traditional medicine to take sufficient interest in and adequately deal with chronic disease and the

continuing education of the populace through the media, bookstores and word of mouth that alternate methods can be helpful.

Advocates of nutritional pharmacology make some important points:

- Despite the recent interest in nutrition there is still widespread ignorance about its relationship to health and illness.
- Traditional western scientific medicine has, until recently, largely ignored this area. Departments of nutritional science are at last gaining higher profile and credibility in medical schools. Nevertheless the education of physicians regarding the diet-illness link remains inadequate; this is even more true with respect to the potential benefits of nutritional pharmacology. A recent comprehensive report "The Impact of Nutrition, Environment and Lifestyle on the Health of Americans" is likely to change this. This 650 page "Kellogg Report," by J.D. Beasley and J.J. Swift, was published in 1989 after seven years of preparation and $3 million support from the Kellogg and Ford foundations in the U.S.
- There are at least 50 essential nutrients—substances the body must get through the diet. These nutrients are water; carbohydrates for energy; fibre; 10 essential amino acids from which proteins are formed; three essential fatty acids; six major minerals and 15 trace minerals; four fat soluble vitamins and nine water soluble vitamins. Ordinarily these essential nutrients are obtained by a healthy person from an adequate diet. Whereas it is universally accepted that major deficiencies of these nutrients can cause disease (for example, deficiencies of iodine causing hypothyroidism, of ascorbic acid causing scurvy, of thiamine causing beri-beri), it has not yet been widely accepted, or definitively proven, that minor deficiencies of nutrients contribute to many chronic physical and emotional disorders.
- Although recommended dietary allowances —the levels of essential nutrients considered adequate—are valid for the *average* adult, there is a wide biological variation in the need of individuals for specific nutrients. Some persons have higher requirements for certain nutrients and for them an average diet can be inadequate in some respects. This is compounded by the processing and refining of the food products we purchase, which often contain lower concentrations of essential nutrients than the natural products. As a result, many Ontarians may have deficiencies of essential nutrients that go unrecognized yet could reduce their resistance to illness, retard their rehabilitation after other diseases are treated and, in some cases, produce illness directly.
- While anecdotal accounts of successful healing using nutritional treatments abound, there are relatively few large-scale studies of the therapeutic potential of nutrients. Pharmaceutical manufacturers, which do most clinical drug trials, have little incentive to fund such studies although academic centres have shown some interest.

Unfortunately, serious advocates of "alternative" treatments have become associated in the minds of many with anti-establishment, fringe-culture movements. As a result their work is often prematurely dismissed as quackery and not subjected to serious scrutiny and to adequate clinical trials. The neglect of nutritional findings is not new. Although Sir Richard Hawkins wrote about a cure for scurvy "with sower oranges and lemmons" in 1593, his ideas were not embraced by the Royal Navy until 1795—200 years later —and the scientific basis of vitamin C treatment was not established until this century.

If it were possible to treat some disorders with inexpensive nutrients which have few and relatively mild side-effects, rather than expensive and relatively more toxic pharmaceutical products, this would clearly be advantageous. Hippocrates (5th century B.C.) said "Let thy food be thy medicine and thy medicine be thy food" and Maimonides (12th century A.D.) went even further: "No illness which can be treated by diet should be treated by any other means." Although neither of these ancient physicians had available the array of life-preserving pharmaceutical products used by doctors today, the advice quoted would still seem to make sense.

What is more, the savings to our tax-supported drug programs would be considerable if lower cost nutrients were demonstrated to be effective and were prescribed rather than drugs or surgery. To illustrate this point, it is instructive to look at five conditions for which advocates of nutritional pharmacology claim success: benign prostatic hypertrophy, childhood asthma, angina pectoris and related cardiovascular problems, osteoarthritis and elevated cholesterol levels in the blood. Traditional medical and surgical methods are used to treat these conditions but none is entirely satisfactory. If the nutritional treatments that some advocate were as successful or better, very considerable financial savings would ensue, with reduced risk of drug or surgical complications and more opportunities for guided self-medication. Like diabetics who are taught to pay close attention to diet and lifestyle, those suffering from such conditions could be taught to take more responsibility for their own health.

If the advocated nutritional treatments for these five conditions were found to be as effective as traditional treatments and were employed instead of the latter, the theoretical savings can be estimated to be very large indeed. Assuming that nutritional treatments were substituted for all Ontarians suffering from these five conditions, an estimate of annual savings of up to $230 million can be made.

It must be stressed that this Inquiry does not have evidence to show that Ontarians being treated for these five conditions can all be safely switched to nutritional treatment. Clearly, steps that must taken before such changes are implemented require an attitude shift by the professions of medicine and pharmacy and action by government.

Health professionals must turn an open mind to the possibility that minor nutritional deficiencies may cause or contribute to illnesses that are not now regarded as nutritional disorders. (It was only a decade ago that most physicians disregarded the link between diet and certain cancers; now a relationship between excessive intake of fats and inadequate dietary fibre and cancers of the breast and colon is considered likely.) Other conditions, including some viral infections (shingles, infectious hepatitis, etc.) may respond to amino acid and vitamin therapy. Unless the medical profession, and especially clinical scientists, encourage systematic study of nutritional pharmacology, its potential cannot be established.

Governments and their research granting agencies have an important role to play as well. Pharmaceutical manufacturers are not likely to sponsor such research. Drug patents for nutritional products are almost impossible to obtain and the price of these products is one-quarter to one-twentieth of the prescription drugs they might replace. Therefore, pharmaceutical manufacturers would have to be given incentives to produce nutritional products if extensive clinical trials did lead to their widespread use, or alternative production and distribution facilities would have to be organized.

One of the research studies commissioned by the Inquiry, "Citizen Behaviours to Alleviate Minor or Non-Acute Symptoms/Maladies,"[3] examined the question of professional acceptance of non-drug self-care strategies. The study, which consisted of physician and pharmacist interviews, concluded that "...physician and pharmacist education is of primary importance..." if this area is to be supported. "There was unanimous agreement that education is a basic prerequisite to any real change in the system...A number...felt that education must be supplemented by political interventions if a real change in the system is to be felt."

The study came up with a series of recommendations which involve: "1) The development of strategies for educating consumers about effective drug use. 2) Designing consumer education on drug-free self-care behaviours. 3) Exploring innovative approaches to educational strategies, including t.v. and radio, pamphlets and written materials, computers and videos. 4) The establishment of an advisory group on drug-free alternatives. Recommended beginning steps involve educating physicians and pharmacists about drug-free alternatives and deciding on appropriate target groups." Finally, the study made an overall recommendation which suggested "Long-term government support for education on appropriate drug use."

Steps that could be taken include the following:

- A critical review of the extensive but largely anecdotal literature on nutritional pharmacology, sponsored by the MOH. This could be analogous to the review of literature pertaining to the use of prescription drugs (the "Goldberg Report"), commissioned by the MOH, which sparked the establishment of the Inquiry. A computer data base of publications considered authoritative could be maintained, in collaboration with the Ontario Medical Association, for the use of Ontario's physicians.
- Increased support for departments of nutritional science in Ontario faculties of medicine and joint studies with appropriate clinical departments. These might include clinical trials in which nutritional treatments are compared with traditional medical treatments (drugs, surgery, etc.)
- Organizing a consensus conference of leading clinicians, nutritional scientists and practising physicians experienced in the use of nutritional treatments to explore the state of the art in Canada and, if possible, recommend studies and policy directions.
- Following the literature review and consensus conference, organizing large scale Ontario pilot projects in which promising nutritional treatments are applied. Results would be widely publicized in the professional literature and by professional associations.
- Careful examination of the implications for nutritional treatments of the recommendations of the Health Professions Legislation Review.[4] (Schwartz report)

[3] Hart-Zeldin, Corinne, Citizen Behaviours to Alleviate Minor or Non Acute Symptoms/Maladies: Final Report to the Pharmaceutical Inquiry of Ontario.
[4] Schwartz, Alan M. *Striking a New Balance: A Blueprint for the Regulation of Ontario's Health Professions*. Recommendations of the Health Professions Legislation Review, 1989.

Chapter XI
Pharmacotherapy for the Elderly

The solution to the problems of pharmacotherapy as they relate to the elderly in Ontario is just one part of the overall scenario. However, we have elected to cover it in detail because: 1) The elderly, as a group, have a great deal to gain and to lose from pharmacotherapy; 2) Ontario has an increasing number of elderly citizens, especially the "old, old" (over 80); 3) There is widespread concern in this area as evidenced by the many submissions the Inquiry received about the elderly and their drugs; and 4) The details we present relative to the elderly illustrate our approach to pharmacotherapy in general and may reveal some of the concerns addressed in general terms elsewhere in this report.

11.1 Special Problems of the Elderly

Although it must be kept in mind that not all the elderly need to take medications, many do. The potential for breakdown of organ systems increases steadily with advancing age and more and more pharmacotherapy may be needed as system after system breaks down. This necessarily implies greater potential benefit as well as increased risk of adverse drug reactions and interactions.

The impaired organ systems of the elderly handle drugs more slowly than those of younger people. This can lead to gradual development of toxicity, even though the drug dose remains constant (e.g. the insidious development of digoxin toxicity in a senior whose kidneys are failing). Even slightly impaired thinking can lead to a wide variety of "pill muddles" and result in under-or over-dosage. A senior may properly be seeing several specialists, and it is easy for one physician to prescribe in ignorance of the other's therapy, which can result in both drug errors and dangerous drug interactions.

However, it is wrong to assume that the only problem is over-treatment of the elderly; under-treatment is also a common problem (e.g. treatable depression may be thought to be untreatable Alzheimers, heart failure may be under-treated, etc.).

11.1.1 General Principles Underlying the Pharmacotherapy of the Elderly

"The incidence of adverse drug reactions rises with age in the adult, especially after 65 years. The disproportionately large number of drugs that elderly are required to take, poor compliance with dosing regimens and the presence of multiple medical conditions, all contribute to this outcome. In addition, however, medication in this age group carries a risk because the dosing regimens must be modified to suit the characteristics of the elderly body, as is now discussed.

"**Absorption** of drugs may be slightly slower because gastrointestinal blood flow and motility are reduced but the effect is rarely important.

"**Distribution** is influenced by the following changes: body weight is reduced so that

standard doses provide a greater amount of drug per kg; body water is less and water-soluble drugs tend to be present in higher blood concentration (and distribution volume decreased); body fat increases, which tends to lower the blood concentration of lipid-soluble drugs (and increase distribution volume); plasma albumin concentration is reduced giving scope for increased free drug.

"**Metabolism** of some drugs is reduced and hepatic enzyme induction appears to be lessened. Liver blood flow diminishes and drugs that are normally extensively eliminated in first-pass through the liver appear in higher concentration in the plasma (greater systemic availability) and persist in it for longer.

"**Elimination.** Renal blood flow, glomerular filtration and tubular secretion decrease with ageing, a decline that is not signalled by raised serum creatinine concentration because production of this metabolite is diminished by virtue of the relatively low muscle mass in the age group. Indeed, in the elderly, serum creatinine may be within the concentration range for normal young adults even when the creatinine clearance is 50 ml/min (127 ml/min in adult male). Particular risk of adverse effects arises with renally eliminated drugs that have a small therapeutic ratio e.g. aminoglycoside antibiotics, digoxin, procainamide and chlorpropamide. Even drugs that are normally eliminated by metabolism may pose a problem through the accumulation of water-soluble metabolites, which retain pharmacological activity, e.g. hydroxylated metabolites of propranolol and tricyclic antidepressants.

"**Drug Response** may alter with ageing, to produce either a greater or lesser effect than is anticipated in younger adults. Drugs that act on the central nervous system appear to produce an exaggerated response in relation to that expected from the plasma concentration and sedatives and hypnotics may have a pronounced hangover effect. These drugs are also more likely to depress respiration because vital capacity and maximum breathing capacity are lessened in the elderly. Response to B-adrenoceptor agonists and antagonists diminishes in old age partly, it is believed, through loss of specific receptor-binding sites. Baroreceptor sensitivity is reduced, leading to the potential for orthostatic hypotension with drugs that reduce blood pressure."[1]

11.1.2 Special Product Listing Needs of the Elderly

The Ontario Drug Benefit (ODB) formulary should list an adequate selection of medications to meet the needs of the elderly. Accordingly, the liquid and suppository formulations of important drugs, such as iron or acetaminophen in appropriate concentrations, should be included for those who have difficulty swallowing solids or using solid or standard dosage forms.

11.1 The Committee therefore recommends that the Drug Quality and Therapeutics Committee be asked to specifically review the availability of liquid and other formulations of drugs such as iron and acetaminophen for those who have difficulty swallowing or using solid dosage forms.

11.2 Drug Utilization, Monitoring and Review

At present, the over-65 population of Ontario represents 11.5[2] per cent of the total and this will increase to 13.5[3] per cent by the year

[1] Laurence, D.R., and P.N. Bennett, *Clinical Pharmacology*, Sixth Edition, Churchill Livingstone, London page 141-142.

[2] Statistics Canada, Postcensal annual estimates of population by marital status, age, sex, and components of growth for Canada and the provinces and territories, Cat. #91-210-1989.

[3] Ministry of Treasury & Economics, Demographic Bulletin: Ontario Population Projections for 2011, Jan. 1989.

2000, with the greatest growth in the over 80 age group. The increasingly aged population in Ontario already utilizes a significant number of prescription and non-prescription medications, and this will increase in the years to come.

By the best present estimate, the over-65 population uses approximately 80 per cent of the ODB budget.[4] While ODB beneficiaries represent 15 to 20 per cent of the population, they consume more than 40 per cent[5] of the prescriptions dispensed in Ontario. This is as a result of a number of factors, including the greater disability and burden of disease experienced by the older population. It is also due to the number of older individuals requiring hospitalization for prolonged periods, or becoming residents in long-term care facilities due to a combination of physical disability and illness, cognitive decline and social isolation.

The present and soon-to-be older generations will, in all likelihood, continue to experience a significant amount of chronic disease that may be relatively and safely ameliorated by rational pharmacotherapy. And this is notwithstanding the research efforts to define risk factors for disease and to determine effective preventative interventions, including social factors that may have an impact on lifestyle practices.

The Inquiry commissioned a research study which was conducted by the department of family and community medicine, University of Toronto and Toronto Hospital: "Prescribing practices in the elderly of a family practice unit...a pilot study"[6] (see appendices, volume II). The following information is derived from that study.

"Eighty per cent of all adverse drug reactions (ADRs) are due to the extension of known pharmacologic properties and are avoidable. The Ontario Medical Association has shown that 33 per cent of all ADRs are in the over 60-year age group, with 20 per cent in the over 70 age group. Of all admissions to hospital due to ADRs, 41 per cent are in the over 60 year age group. The major causes of ADRs are polypharmacy, self medication, lack of compliance, improper storage, physicians' lack of training in geriatric prescribing and poor supervision of elderly patients, dual prescribing systems in hospitals and in general practice, and increased drug sensitivity in the elderly."[7]

The study indicated that multiple drug use in the elderly has many causes, not the least of which are legitimate health needs. But there are also difficulties with respect to physician behaviour: physicians may be unaware of the number of drugs they are prescribing, can make inaccurate diagnoses, take drug histories carelessly, fail to set clear therapeutic goals, have an inadequate knowledge of pharmacotherapy, and have an inadequate medical education related to geriatric pharmacotherapy.

In a review of English-language Canadian literature on prescribing for the elderly, Lexchin states that: "The most apparent conclusion that can be drawn...is that we know astonishingly little about prescribing to the elderly. Only prescribing of benzodiazepines has been examined in any detail...For nearly all other drugs, our knowledge is minimal to nonexistent..."[8]

As part of the ongoing effort to improve the knowledge base of health care professionals and to assess the impact on their prescribing practices, a system of drug utilization review

4 Based on ODB claims expenditures, 1989-90.

5 Brief by Greenshield, #103-3200, p.24.

6 Bloom J.A., M.S. Shafir, J.W. Frank and P. Martiquet, Prescribing Practices in the Elderly of a Family Practice Unit. Final Report to the Pharmaceutical Inquiry of Ontario, December, 1989.

7 Ibid. Bloom, J.A. p.1.

8 Lexchin, Joel, "Prescribing for the Elderly: A Review of English Language Canadian Literature," *Canadian Family Physician*, 35:1613-1618 (1989.)

and impact analysis must be developed. This will ensure that the process of improved drug usage is continuously being evaluated and that new findings are integrated into prevailing attitudes and prescribing practices.

This must be coupled with well-developed information systems to help ensure that physicians have available to them current data about medications, as well as individual patient profiles which highlight potential risks for drug-related problems. To this end, record-keeping and the exchange of important disease and medication-related information must be coordinated among prescribers, dispensers and those involved in counselling, monitoring and assuring compliance.

11.2 The Committee therefore recommends that the smart cards which are to be introduced to facilitate drug utilization, monitoring and review (see recommendation 8.10), be programmed to ensure that problems in pharmacotherapy (e.g. drug interactions) are promptly identified. Electronic communication systems recommended for all pharmacies (see recommendation 8.2) should similarly be programmed to take into account the special problems of prescribing for the elderly. Similar systems should be developed for practising physicians.

There is also a role for manufacturers in terms of ensuring the safety and effectiveness of new drugs, as these relate to seniors. This point was well made in the submission by the Gerontology Research Council of Ontario (GRCO).[9] GRCO recommended that "Pharmaceutical manufacturers should be encouraged to include seniors in clinical trials of medications, and to test the feasibility of routinely including seniors in all clinical trials. Seniors should be encouraged to co-operate in clinical trials. If this proves feasible, the Health Protection Branch of Health and Welfare Canada should include as a requirement, mandatory clinical trials with patients in various age groups over age 65."

11.3 The Committee therefore recommends that the federal Health Protection Branch and the Ontario DQTC:

a) be asked to encourage manufacturers to ensure that, whenever it is relevant and feasible, data from drug trials submitted in support of applications for licensing and listing include data from older individuals so that safety and effectiveness in that population can be assessed. Similarly, Ontario faculties of medicine sponsoring drug trials should be asked to include older subjects whenever this is relevant or feasible; and

b) be asked to require pharmaceutical manufacturers to provide specific data and recommendations for prescribing for older patients, where this is relevant.

The general principles governing pharmacotherapy for the elderly have been converted to the following 10 "Rules for Prescribing for the Elderly" which were published in the World Health Organization report:

"1) Think about the necessity for drugs. Is the diagnosis correct and complete? Is the drug really necessary? Is there a better alternative?

"2) Do not prescribe drugs that are not useful. Think carefully before giving an old person a drug that may have major side effects, and consider alternatives.

"3) Think about the dose. Is it appropriate to possible alterations in the patient's physiological state? Is it appropriate to the patient's renal and hepatic function at the time?

[9] Brief #66-3100.

"4) Think about drug formulation. Is a tablet the most appropriate form of drug or would an injection, a suppository or a syrup be better? Is the drug suitably packaged for the elderly patient, bearing in mind his disabilities?

"5) Assume any new symptoms may be due to drug side effects or, more rarely, to drug withdrawal. Rarely (if ever) treat a side effect of one drug with another.

"6) Take a careful drug history. Bear in mind the possibility of interaction with substances the patient may be taking without your knowledge, such as herbal or other non-prescribed remedies, old drugs taken from the medicine cabinet, or drugs obtained from friends.

"7) Use fixed combinations of drugs only when they are logical and well studied and they either aid compliance or improve tolerance or efficacy. Few fixed combinations meet this standard.

"8) When adding a new drug to the therapeutic regimen, see whether another can be withdrawn.

"9) Attempt to check whether the patient's compliance is adequate, e.g. by counting remaining tablets. Has the patient (or his relatives) been properly instructed?

"10) Remember that stopping a drug is as important as starting it."[10]

The issue of optimal pharmacotherapy for the elderly is being addressed in many jurisdictions.[11] A leading article in England [12] asked the question: "Need we poison the elderly so often?" The article suggests that the myth of "a pill for every ill" may be becoming displaced by a different myth: "an ill for every pill." Clearly, perspective is required.

There is a relative lack of information about geriatric drug therapy and what is known is *not* readily available to physicians at the time they are prescribing for elderly patients. As people age, they are at increasing risk of developing a growing number of diseases, especially those of a chronic nature. Some of these diseases will affect the response to drugs. At the same time, they are more likely to benefit from drug therapy and to be prescribed more medications, or to self-medicate to gain symptomatic relief. Finally, they are more likely to see multiple specialists to deal with multiple problems. Any of these physicians may order drugs without knowledge of the medications that other physicians have prescribed. Accordingly, there is a need for coordination of geriatric drug therapy and the patient's general or family physician is usually particularly well suited for this role. However, because a large knowledge base that is kept up to date is implied in the role, there may be practical difficulties for a general practitioner, including a less than optimal education about pharmacotherapy in the elderly and a poor information base, especially for drugs prescribed by other physicians.

It is easy to recommend that all patients have a personal physician. It is more difficult to ensure this in an age of mobile populations, although the elderly probably move less than the physicians caring for them. Physician shortages are local and regional rather than general. Specialists and special clinics often provide excellent care, but communication skills may lag behind clinical expertise. It is commonplace for a family physician to receive a hospital discharge letter months after the patient has been discharged. This becomes a much less serious problem if the institution has proper discharge procedures (see recommendation 8.17) which help ensure continuation of optimal therapy.

10 In Caird F.I. (ed) *Drugs for the Elderly*. Copenhagen: World Health Organization, 1985.
11 Cartwright, Ann and Christopher Smith, *Elderly People, their Medicines, and their Doctors*, Rutledge: New York, 1988.
12 "Need we Poison the Elderly so Often?" The Lancet, July 2, 1988.

As the elderly are especially prone to multiple illnesses, they are particularly liable to suffer adverse drug reactions due to drug and illness interactions. This is especially so if the multiple prescribers do not know the other drugs the patient is taking. Such patients benefit immensely (as does the system) if they carry an up to date medication list and choose to use a single pharmacy. Clearly the drug list is only useful if it is used and general practitioners and pharmacists need to share the information with those who need to know it, especially nurses and other health care providers caring for the patient.

Keeping the drug list up to date is one of the reasons experienced physicians recommend that patients on complicated medication regimens bring all medications at each visit to a doctor or hospital. This also permits: 1) an improved opportunity to check compliance; 2) the opportunity to reinforce simple education (e.g. "this pill is for your heart;") 3) the opportunity to confiscate obsolete medication and minimize "pill muddle;" 4) the opportunity to minimize errors because, despite everyone's best intentions, medication lists may not always be up to date (changes are made by phone when test results become known, etc.); and 5) a reduction of potential errors when medications are moved out of the container in which they were dispensed.

11.4 The Committee therefore recommends that:

a) The Ministry of Health, with the advice of seniors' organizations, develop guidelines and an information campaign aimed at ensuring that by 1994, all patients, especially the elderly, choose and remain with one personal physician.

b) The Ontario Medical Association, the Ontario Hospital Association and the College of Physicians and Surgeons of Ontario establish guidelines by 1992 to ensure that specialist physicians and hospital clinics meticulously and expeditiously inform a patient's family physician of suggested alterations in the patient's drug regimen.

c) The College of Physicians and Surgeons of Ontario, the College of Family Practice, and the Ontario Medical Association establish guidelines, by 1992, to ensure that primary care physicians maintain and regularly update the older patients' medication list. This information should be shared with other professionals caring for the patient.

d) The Ontario Medical Association and the Ontario Hospital Association, in conjunction with seniors' organizations, establish guidelines by 1991 to communicate to physicians the need to require patients on complicated drug regimens to bring all medications to each visit to any doctor or hospital.

11.2.1 Prescription Drug Addiction and the Elderly

It is very easy for prescribers to start hypnotic, sedative and tranquillizing drugs but it may be very hard for patients to stop them. Distressing confusional states, depression and falls are all too often the result. Psychological and sometimes physical dependence occurs all too often. Clearly prevention is better than treatment. A simple and effective way of dealing with this problem was presented to us. The approach is positive and non-judgemental and involves requesting consultations from appropriate experts prior to renewing sedatives for long term use.[15]

11.5 The Committee therefore recommends that, by 1992, the College of Physicians and Surgeons of Ontario, the Royal College of

[15] Dr. H. Cohen in his presentation as part of the Council on Aging of Ottawa-Carleton, brief #118, 5100.

Dental Surgeons and the Ontario Medical Association develop guidelines in order that prescriptions for hypnotics, sedatives and tranquilizers be issued for the shortest possible time and be clearly marked "no repeats" unless there is a clinical indication to the contrary.

Despite this recommendation, we recognize that in some cases, patients with severe, long-term anxiety states may require long-term use of anxiolytic drugs.

The Committee also suggests that persons habituated to hypnotics, sedatives and tranquilizers are helped to withdraw from the regular use of these drugs. (See recommendation 9.6.)

We wish to emphasize that optimal rational pharmacotherapy for the elderly may well imply the decision not to use certain prescription or over-the-counter medications. Proper diet, proper use of simple physical and household remedies, and an appropriate attitude to self limiting aches, pains, and illness are essential. (See also chapter 10)

We believe that rational pharmacotherapy can and should play an important role in securing the best possible quality and length of life for elderly Ontarians.

11.3 Education of Physicians and Other Health Care Providers

The goal of the health care professions should be to ensure that older individuals have the medications they require, in the appropriate dosages and for the necessary duration of therapy. This requires that physicians have a competent command of the factors that impact on drug pharmacokinetics, pharmacodynamics and other effects, as well as those factors that ensure appropriate drug utilization and compliance. It requires the same from pharmacists and other health care providers who participate in the chain of events that affects medication use by the older person.

This was recognized by the North York Inter-Agency and Community Council[14] which recommended that the education of physicians and pharmacists should specifically include knowledge about the geriatric population and medication, how the ageing organs deal with medication and how medications interact in the aged person.

Until recently, physician training focused only minimally on the geriatric population. Despite the fact that, with the exception of obstetricians and pediatricians, most physicians will spend a considerable amount of clinical time caring for older patients, there is little in the core curriculum of medical schools pertaining to the older population. A few lectures, occasional clinic groups, and some available selective and elective courses have provided all the potential exposure that medical and other health care students have of the older population. Just the fact that many of the courses are elective suggests to medical students that caring for the elderly is an optional, rather than an intrinsic, part of medical education and responsibility.

Concern in this regard was reflected in a number of submissions, including that of the Ontario Coalition of Senior Citizens' Organizations[15] which proposed that every medical school should provide special education in geriatric pharmacology in order to improve health care for the elderly. The Manitoulin-Sudbury District Health Council[16]

14. Brief #104-5100.
15. Brief #76-5100.
16. Brief #157-5100.

called for both significant curriculum increases in geriatrics and mandatory continuing education programs in the area of geriatrics and geriatric pharmacology.

Recent attempts to rectify the situation by the development of more formalized departments and divisions of geriatrics have yet to be reflected in the knowledge base of, and attitude towards, medical care and drug usage in the older age group.

In order to rectify that situation, it will be necessary to implement changes to both undergraduate and postgraduate education programs.

11.6 The Committee therefore recommends that all Ontario faculties of medicine be requested to review their undergraduate and postgraduate curricula, by July 1, 1992, to ensure that:

a) appropriate instruction and experience are provided in prescribing for the elderly, emphasizing the differences from prescribing for younger patients; and

b) all family medicine and specialty postgraduate training programs have specific rotations in geriatric medicine, as appropriate, including supervised pharmacotherapy experience in ambulatory and long-term, as well as acute care settings.

Continuing medical education programs must also be amended to bring about modifications in attitudes in order to eliminate the extremes of therapeutic nihilism and irrational polypharmacy.

11.7 The Committee therefore recommends that the Ontario Medical Association be asked to review, by January 1, 1992, the adequacy of continuing medical education courses available to Ontario physicians with respect to all aspects of geriatric medicine and pharmacotherapy for the elderly. The OMA, in collaboration with the Ontario faculties of medicine, should be asked to ensure that educational gaps are filled so that Ontario physicians can readily and regularly update their knowledge and skills with respect to caring for and properly prescribing for the elderly.

11.8 The Committee also recommends that the Royal College of Physicians and Surgeons and the College of Family Practice of Canada be requested to review their educational objectives and requirements with regard to geriatric medical education and pharmacotherapy for the elderly.

11.4 Hospitalization/Institutionalization of the Elderly

A substantial portion of Ontario drug costs are spent on behalf of individuals who are institutionalized in acute care hospitals and long-term care facilities such as nursing homes, homes for the aged and chronic care hospitals. The reasons for admission to these institutions differ; length of stay depends on the reason for admission and the type of institution. The pattern of drug prescribing and usage depends on the nature and duration of the medical condition(s) that require therapy.

Older individuals are admitted to acute care hospitals from their homes, or from long-term care facilities unable to provide the acute care required during medical crises. The majority of older individuals are able to return home, or to the institution from which they were transferred, following treatment. Some, however, cannot be readily discharged and occupy a bed within the acute care facility while waiting for placement in a suitable long-term care facility. Many general hospitals in Ontario have populations in which more than

50 per cent of patients are over 65 years of age while 20 to 25 per cent are over 75 years old. The number of patients "awaiting placement" at any given time at acute general hospitals may range from 20 per cent to 40 per cent of the potential medical patient population.

The majority of older patients are admitted to general hospitals for acute inter-current medical problems for which medical intervention represents a potential benefit. Those admitted from their own homes have the greatest chance of being discharged back to their homes. For those admitted from long-term care institutions, arrangements for discharge back to the institution are often made early after admission. However, as a group, older individuals risk not being able to be discharged back into the community, or to the level of care provided by a nursing home/home for the aged, as a result of a complexity of medical problems that undermine their ability to function.

In addition to the complex medical problems that often undermine the older patient's ability to function optimally, drug therapy may aggravate impaired physical and/or mental functions. Hospitalized elderly patients are at risk due to multiple drug prescribing (polypharmacy), drug interactions and adverse drug reactions. The latter category includes outcomes from various aspects of drug prescribing (under-prescribing, over-prescribing, inappropriate drug dosages, etc.) and is one of the causes for admission to hospital for a significant proportion of older patients.

There is evidence to suggest that methods to improve the knowledge base for drug prescribing in the elderly, as well as an enhanced level of geriatric care education (through geriatric consulting teams, geriatric units, etc.) exist and, when implemented, may reduce the degree of inappropriate drug utilization in this group.

A number of steps can be taken by general hospitals to decrease the likelihood of inappropriate drug prescribing for, and utilization by, older patients. These include:

- A hospital drug formulary that clearly lists the drugs available within the hospital and contains the appropriate range of dosages for older patients, together with some basic drug prescribing information that is readily available to all members of the health care team.
- On-site interaction/consultation among members of the department of pharmacy, physicians and nurses to evaluate and review medication use by older hospitalized patients. (The Ontario Coalition of Senior Citizens' Organizations[17] has recommended in this regard that a geriatrician be hired to consult with the pharmacy medical advisory board of each acute care hospital over 300 beds, and every long-term care institution, and to assist with peer review of elderly patients' drug treatments, especially in nursing homes.)
- The development of geriatric consultation teams, which utilize the expertise of geriatricians (or physicians especially interested in the care of the elderly), and clinical nurse specialists in geriatrics, who can participate in the evaluation and review of drug usage.
- A drug utilization review process for the hospital that focuses on specific high risk drugs (psychotropic, cardiac, anti-inflammatory drugs, etc.) and that can evaluate drug usage in general, as well as specifically identify physicians who might benefit from special educational upgrading.

[17] Brief #76-5100.

- Periodic educational activities directed to the medical and nursing staff to upgrade generally the knowledge of drug prescribing for the older patient.
- Improved education of the elderly—on the expected outcome of the drug therapy, possible side effects, and administration directions—is desirable and could improve compliance. Methods could include verbal interaction, written reinforcement and self administration of drugs prior to discharge to assess the effectiveness of the education and determine the expected level of compliance.

The adoption of certain procedures in the areas of acquisition, distribution, prescribing and dispensing would improve pharmacy systems and routines in acute care hospitals. Specific recommendations and further discussions on these topics are found in other areas of the report. (See section 3.2 for a discussion of hospital drug acquisition; section 6.3 with respect to unit dose; chapter 9 with respect to drug utilization review; and chapter 6 with respect to maintenance of patient profiles in pharmacy practice.)

11.9 The Committee therefore recommends that the Ministry of Health, in conjunction with the Ontario Hospital Association, the Ontario Association of Non Profit Homes and Services for Seniors and the Ontario Nursing Home Association require that, by July 1, 1992, all acute care hospitals and geriatric long-term care facilities establish appropriate systems to monitor the pharmacotherapy of elderly patients.

Chapter XII
Conclusions and Recommendations

The preceding chapters have presented the findings of the Pharmaceutical Inquiry of Ontario. These are now summarized, our recommendations are listed and an estimate of the resultant costs and savings is offered.

12.1 Issues Raised by the Committee

Since our purpose has been to recommend improvements to the use of prescription drugs in Ontario, the focus has been on problems and inadequacies. However, it is important to place these in the appropriate context. It is our conclusion that Ontarians generally do receive excellent treatment involving prescription drugs. For the most part, pharmaceutical products are safe and effective and appropriately prescribed, dispensed and used. Prescription drugs are generally available promptly. They are affordable for most Ontario residents. Since prescription drugs are an important component of modern health care, the Committee found all this reassuring.

Nevertheless problems were identified. For example:

- Some pharmaceutical products listed in the Ontario Drug Benefit plan formulary (the costs of which are reimbursed with public funds) are sub-optimally effective and/or have unfavourable benefit/risk ratios.
- Some physicians do not prescribe drugs effectively or efficiently; misprescribing is especially problematic in the case of the elderly. A particular concern is that some physicians prescribe powerful drugs when other therapeutic approaches may be safer or more effective. Some physicians inappropriately prescribe expensive, newly-released products before trying less costly and well-established drugs.
- Physicians are not as well prepared for prescribing the thousands of drug products available as they might be, especially with respect to the elderly. The continuing education of physicians with respect to the use of new drug products requires improvement.
- Pharmacists are not meeting their full professional potential as members of the health care team. They do not have the opportunity to use all the skills and knowledge they have acquired because their role is defined too narrowly.
- Some Ontarians who need prescription drugs do not have ready access; they do not qualify for government programs because they are under 65 and are not receiving social assistance and they cannot purchase adequate private insurance. The two groups most at risk are those who do not have insurance through the workplace but have low incomes (the "working poor") and people with extraordinary drug costs due to severe chronic disease or disability. Between 600,000 and 700,000 individuals fall into one of these groups and do not have adequate access to needed drugs.

- The public expects Canadian governments to assume major responsibility in the prescription drug field; specifically, governments must ensure that drugs are safe, effective and affordable. Yet coordination among federal and provincial ministries is less than optimal. There is no national policy regarding drug interchangeability and the process of approval and licensing of drugs is more complicated and time consuming than it needs to be.
- Although provincial government policies have encouraged generic drug product use, prescription drug costs have not been well contained.

The large number of recommendations offered in the report (147) is a reflection of the complexity of the prescription drug field and the broad mandate of the Committee. The recommendations have been introduced in the appropriate context within the chapters which contain the underlying rationale; they are repeated at the end of this chapter so that the complete picture can be seen more easily. The thrust of the major recommendations is outlined as follows:

Recommendations intended to produce improvement in the **quality** of treatment involving prescription drugs include those that will:

- enhance the prescribing skills of Ontario physicians through better education, drug utilization review and better post-marketing surveillance of drug products;
- promote greater use of the knowledge and skills of pharmacists, improve their education and define the role of auxiliary personnel;
- improve the packaging, labelling and dispensing of prescription drugs, in both health care institutions and community pharmacies;
- produce a restructured, more restricted ODB formulary;
- protect the viability of the wholesale distribution industry in Ontario and introduce performance standards;
- promote the development of modern information systems; and
- expand and improve consumer education.

Recommendations designed to improve **access** to needed drug treatment for all Ontarians include those that will:

- extend government drug benefits to high risk groups (persons suffering from certain chronic illnesses or faced with sudden catastrophic drug costs); and
- extend government drug benefits to the "working poor."

Recommendations intended to control the **cost** to the taxpayer of prescription drug programs include those that will:

- eliminate "special authorizations" of drug products not listed in the ODB formulary;
- roll back some prescription drug prices and contain future price increases;
- limit the formulary entry price of generic drugs;
- restructure the ODB formulary so that it will contain drugs with more favourable benefit-risk and benefit-cost ratios;
- eliminate the 10 per cent surcharge payable to pharmacists on direct purchases from manufacturers;
- accelerate and simplify the approval of new drug products; and
- institute a prescription co-payment for those persons now eligible for government drug benefits who are not receiving social assistance, to a maximum of $250 per person in any year.

12.2 Estimating the Costs and Savings of the Recommendations of the Inquiry

The Pharmaceutical Inquiry of Ontario has attempted to estimate the cost implications of its recommendations. The 1988-89 fiscal year is the last year for which we have complete information on the costs of the ODB program, and is taken as the reference point. The calculations which follow indicate what the costs of the ODB would have been had the recommendations in the report been in force for that fiscal year.

There are recommendations that relate directly to the cost of operation of the ODB, and we were able to derive reasonable estimates for them. Other recommendations are more global and refer to changes in the education and training of professionals, rational prescribing and dispensing, linking data and monitoring use, and the role of pharmaceutical products in health care. These call for more fundamental changes in health care in Ontario, and we have no real way for estimating economic impact, either in terms of costs or benefits that would accrue from improved health care.

12.2.1 Expenditures of the Ontario Drug Benefit Plan

During the 1988-89 fiscal year, the ODB program paid $629.9 million in benefits for 1.5 million recipients to cover the costs outlined in the table below:

Expenditures and Claims
Ontario Drug Benefit Program
1988-89

Expenditures	Amount	Claims
Prescription Drug Costs	$554,884,500	32,022,900
Upcharge or Surcharge	35,488,400	
Dispensing Fees	188,803,200	
Non-Prescription Drug Costs	50,774,300	3,348,600
Totals	$629,950,400	35,371,500

Drug manufacturers were paid $405.7 million for drug products. The surcharge or upcharge was paid to the pharmacists. About half of the drugs were sold to the pharmacists directly; they retained the associated upcharges ($17,744,000) as a part of their gross income. For the drugs sold indirectly, it is estimated that the pharmacists paid wholesalers about $14,195,400 in fees and retained $3,548,800. The gross income of pharmacists in fees and upcharges was about $210.1 million, or about one-third of the total ODB costs.

12.2.2 Estimating the Impact of the Recommendations on the Costs of the Ontario Drug Benefit Program

12.2.2.1 Elimination of Special Authorizations: Special authorization (SAs) expenditures were reduced in mid-1989 as a result of an interim recommendation by this Inquiry. Had SAs been permitted to continue, the estimated costs for 1988-89 would have been about $22 million. By 1988-89, SA costs had reduced to $13.2 million for the year. Had the SAs been completely phased out, a conservative estimate is that the ODB costs would have been reduced by two-thirds to $7.3 million for the 1988-89 fiscal year.

The estimated saving due to this recommendation is $14.7 million.

12.2.2.2 Constraining the Price of Prescribed Drugs: In section 5.4 of the report, *we recommend that the prices be rolled back* to the 1986 formulary levels and then be allowed to increase at the rate of increase in the consumer price index. In recommendation 5.2, we also suggest that the price of generic drugs be set at 60 per cent of the reference price for the patented medicine. We estimate that had the recommendation been implemented, there would have been a 5 to 10 per cent decrease in the cost of prescribed drugs. The estimated savings due to these recommendations range from $17.7 million in drug costs and $1.8 in surcharge costs to $35.9 million in drug costs and $3.5 million in surcharges.

The mid-range estimate of the savings is $29.5 million.

12.2.2.3 Distribution Costs: In chapter 6 of the report, the Inquiry recommended that the surcharge or upcharge for drugs sold directly be dropped and that pharmacists receive 8 per cent of the drug costs for drugs purchased through wholesalers. Approximately half of the prescribed drugs are sold directly by the manufacturer to the pharmacists. The recommendation would reduce the upcharge or surcharge costs ($39.49 million) by 60 per cent to $14.2 million.

The estimated savings of the recommendation is $21.3 million.

12.2.2.4 Prescription Renewals: In chapter 7, the Inquiry recommended that the professions of pharmacy and medicine jointly study the appropriateness of the quantity of drugs on a prescription and issue appropriate guidelines. It is difficult to predict the outcome of these discussions and the effects, on quantities prescribed, of any guidelines that might be developed. We do have some estimates based on a study done for the Inquiry by Dr. Paul Gorecki (see appendices, volume II.) Dr. Gorecki compared the frequency with which 40 drugs used for chronic conditions were renewed in British Columbia and Ontario. These drugs in Ontario accounted for about one-third of all ODB claims for the month of March in 1986. He estimated that a 20 per cent reduction in claims could be achieved if the Ontario guidelines resulted in an increase in prescribing quantities to the maximum of 250 days for all maintenance drugs, as is the case in B.C. Not all claims are for repeat prescriptions nor is it reasonable to assume that a 250-day limit is appropriate for all repeat prescriptions. We estimate the potential reduction in the number of claims to be in the order of 10 per cent. There should be no drop in the costs of drugs; the resulting savings would come from the reduced number of dispensing fees. Using the 10 per cent estimate, the potential for savings is $18.9 million.

12.2.2.5 Add Low Income and Disabled Persons to ODB: In chapter 9 of the report, the Inquiry recommended that elderly recipients of ODB who do not receive the social assistance supplement (GAINS) be required to make a copayment of not more than $4 a prescription. A cap of $250 was also recommended as the limit that any one person would pay per year. We estimated that the average annual cost for a senior citizen making co-payments would be between $65 and $90. The estimated savings for the ODB were between $81.6 million and $140.8 million, depending on the amount of the copayment and the degree to which drug use would decline.

The mid-range estimate of the savings for ODB was $111.2 million.

The Inquiry recommended that ODB benefits be extended to low income and disabled persons with high drug costs who were not eligible for ODB benefits. The estimated costs for extending the benefits ranged from $59.2 million to $232.5 million.

The mid-range estimate of the **added cost to ODB** was $150 million.

The Inquiry further recommended that the co-payment be introduced for low income and disabled individuals who do not received social assistance. This would reduce the mid-range **added cost to ODB** from $150 million to $95 million.

The costs and savings of the recommendations dealing with the Ontario Drug Benefit plan are summarized in the following table. The values inserted into the table are the mid-range estimates for the various recommendations. The totals suggest that the recommendations would add about $95 million and save $195.5 million, resulting in a net savings of about $100 million a year. This is approximately equivalent to a 15 per cent reduction in the annual costs of the ODB program.

Savings and Costs of Recommendations Regarding the Ontario Drug Benefit Program 1988-89

Recommendations	Added Savings (millions)	Cost
Eliminate Special Authorizations	$14.7	
Constrain Price Increases for Prescribed Drugs	29.5	
Modify Distribution Costs	21.3	
250 Day Supply Limit for Prescription Renewals	18.8	
Copayments for Elderly Not Receiving Social Assistance	111.2	
Extend ODB Coverage with Copayment to Low Income and Disabled Persons		$95.0
Totals	$195.5	$95.0

12.2.3 Economic Impact of Other Recommendations

The Inquiry recommended that the scope of the Drug Quality and Therapeutics Committee (DQTC) be expanded to include a complete review of all drug products currently listed in the formulary, by defining the limited use of selected drug products, and by including assessments of the marginal costs and effectiveness of new drug products in its reviews. The expanded activities would probably double the annual operating costs of the DQTC from $170,000 to $340,000.

The creation of a doctorate in pharmacy program is estimated to cost about $950,000 a year. Present plans calls for the costs of the program to be shared by the University of Toronto and the participating teaching hospitals, and for a reallocation of existing funds to meet the costs.

It would take about $3 million to operate a second faculty of pharmacy. The start-up costs and capital expenditures would depend on the resources available at the university where the faculty would be located.

The introduction of a clinical preceptor year to a pharmacy program is estimated to cost about $1.2 million in operating costs a year.

The total of these identified cost increases is $5.32 million.

There are recommendations for which no cost estimates are available. These include the development of drug profiles for patients in the pharmacy, linkage between hospital and community pharmacies, reimbursement schedules for the expanded activities of pharmacists in the community, monitoring of drug compliance, or the cost of publishing "Medications of Choice." In chapter 10, alternatives to medications for managing chronic illnesses and problems are presented. In reality we do not know the extent to which pharmaceutical products could be replaced with other forms of management, or what the net costs would be for the health care sector. It is reasonably clear that the potential costs and savings of rational health care would be of greater importance, if realized, than the specific recommendations regarding the operation of the ODB program per se.

12.3 Conclusion

We are convinced that the changes recommended in this report will improve a system that is already very good. Many of these changes will require the expenditure of more public funds. However, in today's economic climate it is not realistic to recommend new expenditures, however justified, unless offsetting savings can also be identified; this we have attempted to do. The net effect of our recommendations would actually reduce the cost of taxpayer-supported drug programs in Ontario while, we believe, improving the quality of prescription drug use and access to needed drug products to all Ontarians.

In order for this to be achieved some trade-offs are necessary. They will require contributions from several important interest groups, in the form of somewhat lower profits for some pharmaceutical manufacturers and pharmacies and a co-payment (up to an acceptable annual maximum) for ODB-eligible persons not receiving social assistance.

We are convinced that if implemented, the recommendations that follow will serve the public interest and, in the long run, the interest of health professionals, manufacturers and distributors of prescription drugs.

12.4 Summary of Recommendations

The recommendations contained in the report are listed by chapter as follows. It should be noted that not all chapters contain recommendations.

Chapter IV The Formulary and the DQTC

4.1 The Committee therefore recommends that an Ontario Drug Benefit formulary be retained but with significant changes.

4.2 The Committee therefore recommends that after publishing the January, 1991 edition, the formulary be frozen in order to permit a new unencumbered formulary to be created. The benefits listed in the January, 1991 edition would therefore only continue until the publication of the unencumbered formulary, at which time all existing benefits would be terminated in favour of the new formulary benefits.

4.3 The Committee therefore recommends that, beginning immediately, a review with respect to efficacy, safety, equivalence and cost of all products now listed in the formulary be initiated by the Drug Quality and Therapeutics Committee.

4.4 The Committee therefore recommends that mechanisms be developed to permit a drug product to be listed at the recommendation of the DQTC, even when no submission was initially made by a manufacturer.

4.5 The Committee also recommends that provisions be made to allow the formulary to take on a dynamic character; single and multiple source products should be regularly re-evaluated and then be retained, deleted or redefined by category.

4.6 The Committee therefore recommends that the Ministry of Health, in cooperation with the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons, the Ontario Medical Association, the Ontario College of Pharmacists, and the Ontario Pharmacists' Association launch a program by January 1, 1992, that will monitor drug use and increase prescribers' accountability for their pharmacotherapy.

4.7 The Committee therefore recommends that the development and use of multisource products in non-conventional dosage forms be promoted where possible by assembling and promulgating criteria which permit interchangeable products of non-

conventional dosage or administration forms to be identified and listed.

4.8 The Committee therefore recommends that the Ministry of Health, the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons, the Ontario Medical Association and the Council of Faculties of Medicine work together to develop mechanisms to promote generic prescribing when this is appropriate.

4.9 The Committee therefore recommends that, after the January, 1991 edition, the Ministry discontinue the present system of formulary publication wherein bi-annual deadlines are specified and devise, in its place, a continuous system of product review.

4.10 The Committee therefore recommends that an expert drug advisory committee, as represented by the present DQTC, be retained, with terms of reference similar to those already established, but modified as proposed in recommendation 4.11.

4.11 The Committee therefore recommends that the DQTC's terms of reference be reviewed by January 1, 1991 and consideration be given to:

a) An expanded mandate that authorizes more effective evaluation of drug product cost factors; and

b) An expanded mandate, along with appropriate resources, that will permit the monitoring of the impact of formulary changes.

4.12 The Committee therefore recommends that the Ministry and the DQTC become more active in regularly communicating with health care professionals about formulary benefits and the review process.

4.13 That the special authorization program be discontinued in its present form.

4.14 That all drug products to be authorized for payment under the Ontario Drug Benefit program be approved by the DQTC. (See recommendation 4.20 for the transition period.)

4.15 That all drug products authorized for payment by the Ministry of Health be listed in the formulary with specifications of the conditions, if any, under which they are eligible for coverage under the Ontario Drug Benefit plan.

4.16 That all drug products for which special authorization issuances have been granted be reviewed comprehensively by the DQTC. We further recommend that this be done in order of their frequency of use (commencing with the most commonly used), using the criteria required for formulary listing. All drugs approved by the DQTC after review should be listed in the formulary. Those drugs that fail to gain approval by the DQTC should neither be listed in the formulary nor be eligible for payment by the Ministry of Health.

4.17 That the formulary contain two categories of drugs: *regular use* and *limited use*. The cost of regular use drugs should be reimbursed whenever they are prescribed and dispensed to persons eligible for Ontario Drug Benefit programs.

Limited use status may be granted to other drug products that will only be reimbursed under conditions determined by the DQTC and set forth in the Ontario Drug Benefit formulary. For example, *limited use* status may be granted when one or more of the following conditions apply:

a) when the limited therapeutic conditions that were determined by the DQTC and set forth in the Ontario Drug Benefit formulary have been met;

b) when *regular use* drugs have been tried and found ineffective, or have caused an adverse effect for a particular patient; and

c) when alternative *regular use* drugs are contraindicated, due to concomitant therapy or to particular patient characteristics.

It would be the professional responsibility of the prescriber to verify that the condition(s) have been met.

4.18 That the conditions and restricted indications, if any, under which drugs will be authorized for reimbursement be clearly indicated. This may be done through appropriate footnotes or other means in the formulary.

4.19 That all drug products for which past special authorization issuances have been granted, once they are reviewed by the DQTC, be caused to fall into only one of the following categories:

a) Formulary listing with *regular use* status;

b) Formulary listing with *limited use* status; and

c) Ineligibility for reimbursement by the government of Ontario.

4.20 That during the transition period, until the DQTC is able to review drugs for which special authorization issuances have been granted, all current special authorization drugs awaiting review be permitted to maintain their special authorization status. However, there should be a strict moratorium on the addition of any new products to special authorization status.

4.21 That the DQTC establish a mechanism to expeditiously review new drugs which are major therapeutic advances.

4.22 The Committee therefore recommends that while the present Ontario policy of drug interchangeability, which promotes generic drug substitution and price competition, should be continued:

a) The Ontario College of Pharmacists direct pharmacists to refill prescriptions with the same product as originally dispensed when its price is equivalent to competing products. (It is understood that when there is a substantial price difference, pharmacists will dispense the drug product priced at the level at which they will receive reimbursement.)

b) "No-substitution" prescriptions no longer be included as benefits under the ODB plan; where the patient requests that the specific product prescribed be dispensed, the patient should pay for the difference in price above the lowest cost product for which the pharmacist will be reimbursed.

c) The Ministry of Health, on the advice of the DQTC, establish a mechanism whereby a physician can request that a specific product be permitted as a benefit (the cost of which would be fully reimbursable to the pharmacist) for those very rare situations where a particular patient cannot tolerate or benefit from the lowest priced product.

d) Policy and, if necessary, legislation be altered to require pharmacists to inform both patients and prescribers that product substitution has occurred.

e) When a new generic preparation first comes into general use, the Ministry of Health require the generic manufacturer to publicize appropriate information to prescribers, as innovative manufacturers now do.

4.23 The Committee therefore recommends that the DQTC be empowered to review applications and make recommendations to

the Minister of Health with respect to the interchangeability of drug products independent of the status of the products as benefits under the Ontario Drug Benefit program. If it is deemed necessary to change the legislation or regulations to make this possible, the appropriate change should be initiated.

Chapter V Acquisition of Drugs

5.1 The Committee therefore recommends that the government of Ontario take the lead in promoting federal-provincial and interprovincial agreement for a Canada-wide interchangeability policy. Health and Welfare Canada should be given a wider mandate: in addition to confirming the safety and efficacy of drug products, the approval process should also include a determination of whether the product is bioequivalent to, and interchangeable with, other approved products.

5.2 The Committee therefore recommends that a generic equivalent of a brand-name product not be listed in the formulary for the first time at a price which exceeds 60 per cent of the reference price of the equivalent brand-name product. That reference price will be the listed price of the brand-name product found in the formulary immediately prior to the one in which the generic product is to first appear.

5.3 The Committee therefore recommends that all prescriptions for multi-source products to eligible beneficiaries, whether or not they are inscribed by the prescriber as no-substitution, ordinarily be reimbursed only at the lowest "best available price" for the product. If the pharmacist, at the request of the patient, dispenses a product for which the listed price exceeds BAP, the patient must pay the difference to the dispensing pharmacist. The pharmacist may be reimbursed for a no-substitution prescription of a higher-priced product only when the prescriber has an approved reason for this. (See recommendation 4.21)

5.4 The Committee therefore recommends that the concept of best available price be maintained, in preference to other forms of definition of reimbursement price to pharmacists.

5.5 The Committee therefore recommends that the price for reimbursement of all drugs in the January, 1991 formulary be rolled back to the price at which they were listed in the December 1986, formulary plus consumer price index increases from December 1986 to January 1991. If the product was not listed in the December 1986 formulary, its January 1991 price should be rolled back to the price at which it was first listed after December 1986, and then increased to a value no greater than that allowed by the increase in the CPI from that date to January 1991. If the CPI adjusted price is higher than the current price, the current price should stand.

5.6 The Committee therefore recommends that, for the period commencing with the formulary which follows the January 1991 formulary and ending in January of 1994, increases of drug prices listed for reimbursement shall not exceed 50 per cent of the consumer price index.

5.7 The Committee therefore recommends that the current legislation be amended, with appropriate sanctions, to strengthen the "best available price" concept so that manufacturers are required to sign a binding agreement to make available that product size on which BAP has been determined, at that listed price, to all pharmacies or wholesalers for the duration of the applicable formulary.

5.8 The Committee further recommends that the Ministry of Health vigorously

pursue allegations of deals and incentives provided by manufacturers in order to immediately reduce the "best available price" accordingly, if the allegations prove true.

5.9 The Committee further recommends that the legislation be amended to prohibit pharmacists from claiming reimbursement (for the cost component of the prescription price) under Ontario Drug Benefit at a level higher than that which was actually paid for the product.

5.10 The Committee also recommends that the legislation be amended to require pharmacists, when dispensing prescriptions for interchangeable products in the non-Ontario Drug Benefit marketplace, to charge for the cost component of the prescription price the amount that was actually paid for the product if this amount was less than the best available price.

Chapter VI Distribution of Drugs

6.1 The Committee therefore recommends that minimum standards be established for services provided by wholesalers, in order for their charges to qualify for reimbursement as set forth below in recommendation 6.2. These standards should include availability and fast, province-wide distribution of most prescribed products.

6.2 The Committee therefore recommends that, immediately upon consideration of these recommendations, the Ministry of Health permit wholesalers to enter into agency distribution agreements with manufacturers.

6.3 The Committee further recommends that, to coincide with the effective date of the current renegotiation of the pharmacists' fee, the Ministry of Health take appropriate steps to reduce the percentage added to the best available price to a level designed to compensate for the actual amount the pharmacist must pay to the wholesaler, and to eliminate entirely the upcharge added to BAP for direct sales.

6.4 The Committee therefore recommends that the Ministry of Health take appropriate steps to ensure that no increase in the best available price is allowed when a drug manufacturer moves from indirect to direct sales.

6.5 The Committee therefore recommends that, as part of the current dispensing fee negotiation, the Ministry of Health renegotiate the fee structure by which pharmacists are reimbursed to reflect the reduced upcharge and the expanded professional role for pharmacists.

6.6 The Committee therefore recommends that, by the end of 1992, provincial psychiatric hospitals be allowed to utilize the Ontario Hospital Association's group purchasing plan.

6.7 The Committee therefore recommends that an outside group of consultants be engaged to conduct a comprehensive management and operational audit of the services provided by Government Pharmacy with the express purpose of:

a) examining the possibility of the Ministry of Health divesting itself of the purchasing, warehousing and distribution of pharmaceutical products being carried on through either Government Pharmacy or the supply and services branch, in order that these functions be handled through private sector services which now exist or may be developed; or

b) examining the possibility of developing a more efficient operation of the existing system; and

c) developing, with the involvement of the organizations themselves, more efficient alternatives to those services currently provided to long-term care facilities; and

d) examining the establishment of an outside board of directors from the private sector to oversee the operation should it be retained in some form.

6.8 The Committee therefore recommends that unit dose/IV admixture programs be identified as the system of choice for institutional drug delivery in hospitals above a certain size.

6.9 The Committee further recommends that by 1991 the Ontario Ministry of Health and the Ontario Hospital Association determine the size and other relevant requirements, and that those hospitals identified receive funding for the conversion to a unit dose system.

Chapter VII The Prescribing of Drugs

7.1 The Committee therefore recommends that, as an integral part of optimal therapy, rational pharmacotherapy should be the goal for all concerned with the use of prescription drugs in Ontario.

7.2 The Committee therefore recommends that the Ministry of Health invite the pharmaceutical industry to jointly investigate the possibility of shared funding for an Ontario centre for the study of drug prescribing. It would be attached to one health science centre, with linkages to practising physicians through the Royal College of Physicians and Surgeons of Canada, the College of Family Practice of Canada and the Ontario Medical Association, and to departments of clinical pharmacology that, we believe, should be established in each Ontario faculty of medicine. (See recommendation 7.17.)

7.3 The Committee therefore recommends to the College of Physicians and Surgeons of Ontario and the Ontario Medical Association, that individual prescribers be encouraged to remain advocates for, and responsible to, individual patients. Organized medicine, on the other hand, has a role in protecting society's resources .

7.4 The Committee therefore recommends that the Ontario Medical Association and the College of Physicians and Surgeons of Ontario, with input from the Ontario Pharmacists' Association and the Ontario College of Pharmacists, jointly study the appropriateness of the quantity of drugs on a prescription and issue appropriate guidelines.

7.5 The Committee therefore recommends that the Council of Ontario Faculties of Medicine encourage educational initiatives at each of Ontario's medical schools to include:

a) Pilot studies to determine the effectiveness of changes in undergraduate and postgraduate curricula which emphasize the cultivation and maintenance of good prescribing practices;

b) Greater integration of basic and clinical sciences, in particular integration of pharmacotherapy with pharmacology;

c) Greater recognition by clinical specialist departments of the differences in the pattern and types of morbidity found in university teaching hospitals and community practice;

d) More emphasis on critical appraisal of drug products throughout the medical curriculum; and

e) More emphasis on the specific medical problems and treatment needs of the elderly. (See also chapter 11.)

7.6 The Committee therefore recommends that educational initiatives at the medical postgraduate level include:

a) Regular review of pharmacological aspects of therapy;

b) Improved integration of clinical pharmacology in all services including surgical units;

c) Improved audit procedures regarding the use of drug products (see also drug utilization review); and

d) A specific geriatric experience at either intern and/or residency level.

7.7 The Committee therefore recommends that:

a) The Council of Ontario Faculties of Medicine, the Ontario Medical Association and the College of Physicians and Surgeons of Ontario be asked, by 1991, to develop new, imaginative and effective programs in continuing medical education which will encourage participation of a greater proportion of physicians; and

b) That the Council of Ontario Faculties of Medicine, in conjunction with the Drug Quality and Therapeutics Committee, the Pharmaceutical Manufacturers Association of Canada, the Canadian Drug Manufacturers Association, Health and Welfare Canada, Canadian Pharmaceutical Association and the Ministry of Health be asked to develop, by 1993, innovative post-marketing surveillance studies, of a variety of pharmaceutical preparations, both brand names and generics, and involving large numbers of family practitioners.

7.8 The Committee therefore recommends the development, by the profession of medicine, through its various organizations, of appropriate guidelines to treatment.

7.9 The Committee therefore recommends that "Choice of Medications—1990" be published and made available, on an annual basis, to all licensed physicians and pharmacies in Ontario. The publication should contain guidelines for prescribing based upon objective information about preferred drug products, including their indications, contraindications, side effects, recommended dosages and relative costs.

7.10 The Committee therefore recommends that the Ministry of Health continue to be guided by the DQTC as it develops the "restricted use" concept in the Ontario Drug Benefit formulary. (See also recommendations 4.2 and 4.3.)

7.11 The Committee therefore recommends that the Ontario Hospital Association be asked to foster the continued development and use of restricted hospital formularies.

7.12 The Committee therefore recommends that the Ministry of Health, the Ontario Medical Association and the Ontario Pharmacists' Association promote the extension of the restricted formulary approach to group clinics, nursing and old age homes, health maintenance organizations and comprehensive health organizations.

7.13 The Committee therefore recommends that the use in Ontario of non-proprietary (generic) drug product names be encouraged in the writing and labelling of prescriptions, except where there is a special reason to use a brand name.

7.14 The Committee therefore recommends that the Council of Ontario Faculties of Medicine, the College of Physicians and Surgeons of Ontario, and the Ontario Medical Association be asked to promote regular, appropriate, organized reviews of drug treatment.

7.15 The Committee therefore recommends that, by 1992, the Ministry of Health establish pilot projects to test unbiased detailing in Ontario, based on the Harvard model. Consultation with the Ontario College of Pharmacists, the Ontario Pharmacists' Association, the College of Physicians and Surgeons, the Ontario Medical Association

and the pharmaceutical industry should precede this.

7.16 The Committee therefore recommends that, by 1991, the College of Physicians and Surgeons of Ontario, after consultation with the Ontario Medical Association and the pharmaceutical industry, develop and publicize ethical guidelines for physician/industry interaction, which also deal with the industry's involvement in continuing medical education.

7.17 The Committee therefore recommends that the Ministry of Colleges and Universities be asked to promote and fund the establishment of a department of clinical pharmacology in each Ontario medical school. These should be closely linked to the centre for the study of drug prescribing (see recommendation 7.2.)

7.18 The Committee therefore recommends that the Ontario Medical Association, the Ontario branch of the Canadian Society of Hospital Pharmacists and the Ontario Pharmacists' Association be asked to establish formal mechanisms, at provincial and local levels, that will increase professional liaison, as necessary, on the issues of patient counselling and communication, as well as other issues of mutual concern. We suggest that emphasis be placed on liaison at the community level on an individual and group basis.

7.19 The Committee therefore endorses the recommendation of the Task Force on the Use and Provision of Medical Services (Scott Task Force) to establish the Ontario Council on Health Technology Assessment, and recommends that as one of its tasks, that body evaluates new, high-cost drugs.

7.20 The Committee therefore recommends that the DQTC be asked to review all the over-the-counter preparations that are currently benefits of the Ontario Drug Benefit plan in the same way that it reviews other prescription products, and that the over-the-counter preparations which are to be listed in the formulary be allocated to either the general or restricted use category.

Chapter VIII Dispensing/Administration

8.1 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists clearly defines the respective roles of auxiliary personnel and pharmacists and ensures that assistants perform technical, product-oriented tasks while pharmacists concentrate on patient-oriented tasks such as monitoring drug therapy and providing advice on drugs to patients and other health care professionals. The strategies used to ensure this implementation should be associated with the promulgation of standards of practice and competence assurance.

8.2 The Committee therefore recommends that, by the end of 1992, the Ministry of Health, the Ontario College of Pharmacists and the Ontario Pharmacists' Association jointly devise requirements for information management systems, and guidelines for their use, which will ensure optimal access to patient profiles, and adverse drug interaction programs. In addition, the Committee recommends that the Ontario College of Pharmacists establish practice guidelines to implement the optimal use of this type of information management system.

8.3 The Committee therefore recommends that, by the end of 1990, standards be established for pharmaceuticals introduced in what is known as "dispensing size" or "original pack" packages. The standards should ensure that no original package dispensed should create uncertainty or confusion, be a hindrance to individualized treatment regimens, impede interchange-

ability of drug products (for purposes of interchangeability, physical characteristics of packages should not be regarded as unique) or be a marketing or promotional tool (promotion to the public of a particular brand should not be a feature of design or labelling.) In addition, the packages should be required to meet child resistant standards.

8.4 The Committee further recommends that the Ministry of Health, in consultation with appropriate interested organizations, promptly undertake discussions with the Health Protection Branch of Health and Welfare Canada to establish these standards.

8.5 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists establish a working group for the express purpose of expanding the practise of providing auxiliary labels and other printed information on prescription drugs, along with verbal reinforcement to the patient by the pharmacist. The working group should include consumer representation.

8.6 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists encourage the profession to pay particular attention to the needs of visually handicapped patients by using large type, and appropriate inserts and graphics whenever possible, in the preparation of prescription labelling.

8.7 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists encourage the use of labels and other directions in the language familiar to the patient, with the pharmacist providing appropriate verbal reinforcement.

8.8 The Committee therefore recommends that, by the end of 1990, the Ministry of Health conduct an education campaign, directed primarily at seniors, recommending that patients select a pharmacy and, in so far as this is practical, obtain all pharmacy services there.

8.9 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists enforce this voluntary trend through regulations requiring all pharmacies to maintain patient medication profiles in compliance with defined content standards.

8.10 The Committee therefore recommends that the Ontario College of Pharmacists, the Ontario Pharmacists' Association, the Ministry of Health and other interested parties diligently pursue the development of portable patient medication records such as the "smart card."

8.11 The Committee therefore recommends that, by the end of 1990, the Ontario Medical Association, the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons of Ontario, the Ontario Pharmacists' Association, and the Ontario College of Pharmacists devise guidelines to ensure that the pharmacist, when clinically appropriate and with the agreement of the patient, has access to the patient's diagnosis(es.)

8.12 The Committee therefore recommends that, by the end of 1990, the Ministry of Health, in co-operation with appropriate interested organizations such as the Ontario Pharmacists' Association and the Ontario College of Pharmacists, launch a campaign to make the public more aware of the services that can be expected of a pharmacist, with emphasis on those related to the provision of information on the proper use of medications.

8.13 The Committee therefore recommends that the Ontario College of Pharmacists

require all pharmacies in Ontario, by the end of 1991, to have an appropriate consultation area where patients can discuss their medication with a pharmacist, in privacy and in relative comfort.

8.14 The Committee also recommends that pharmacists exercise more personal control over the sale of non-prescription drugs and that, by the end of 1991, the Ontario College of Pharmacists require all pharmacies in Ontario to have a professional products area, adjacent to or contiguous with the dispensary, where all non-prescription drugs—with the exception of Schedule "C" drugs which must not be available for self-selection—must be located.

8.15 The Committee therefore recommends that, by the end of 1991, the Ontario College of Pharmacists require the use of signs and printed material within the pharmacy to alert the public to the importance of consulting a pharmacist regarding the use of non-prescription drugs, especially when these are taken concurrently with prescription drugs.

8.16 The Committee therefore recommends that, by the end of 1991, the Ministry of Health, in cooperation with the Ontario Pharmacists' Association, establish pilot projects to examine and assess alternative reimbursement and payment mechanisms which would reward the provider of professional pharmaceutical services and be independent of the sale or dispensing of a drug.

8.17 The Committee therefore recommends that, by the end of 1992, the Ministry of Health, in conjunction with the Ontario Pharmacists' Association, the Ontario College of Pharmacists and the Ontario Hospital Association, create a linkage between patient medication files in community and hospital pharmacies and ensure that pre-hospitalization or discharge consultations stress the importance to the patient of such an exchange of information.

8.18 The Committee therefore recommends that the Ministry of Health, in conjunction with the Ontario Hospital Association, the Ontario Medical Association, the Ontario Pharmacists' Association, the Canadian Society of Hospital Pharmacists (Ontario branch), and the Ontario College of Pharmacists immediately encourage the expansion of the clinical role of pharmacists in the increased use of formularies, pharmacotherapy consultation, drug therapy monitoring and subsequent intervention when necessary.

8.19 The Committee therefore recommends that, by the end of 1992, the ministries of Health and Community and Social Services, in cooperation with the Ontario Medical Association, the Ontario Nursing Home Association, the Ontario Association of Non-Profit Homes and Services for Seniors, the Ontario Pharmacists' Association and the Ontario College of Pharmacists, set up pilot projects which involve community drug therapy committees based on models existing in institutional settings.

8.20 The Committee therefore recommends that, by the end of 1990, the Ministry of Health and the Ontario College of Pharmacists ensure that drug information programs are encouraged, supported, coordinated and expanded to other professionals.

8.21 The Committee therefore recommends that, by the 1992 academic year, or the year a new faculty of pharmacy starts operations (see recommendation 8.22), the faculty of pharmacy, University of Toronto, reduce its enrolment to the level for which it was designed.

8.22 The Committee therefore recommends that, by the 1992 academic year, the Ministry of Colleges and Universities establish a second faculty of pharmacy in Ontario, with an enrolment approximating the reduced level of the Toronto faculty.

This should be a five year program similar to that recommended for the University of Toronto (see recommendation 8.23), established at an Ontario university that has a health sciences program which includes medicine. The decision to establish this faculty should take into consideration the need for such services in northern Ontario, but the Committee believes the advantages of having faculties of both medicine and pharmacy at the same location outweigh geographic concerns.

8.23 The Committee therefore recommends that, by the 1991 academic year, the University of Toronto embark on a five year undergraduate pharmacy program to permit more structured practical training and increased instruction in communications, patient counselling, therapeutics, drug information, pathophysiology and geriatrics.

8.24 The Committee therefore recommends that the practical training program for pharmacy students and interns be structured and form part of the five year program recommended above (see recommendation 8.23.)

8.25 The Committee therefore recommends to the Ministry of Colleges and Universities that, within the next two years, a doctor of pharmacy program be established at an appropriate faculty of pharmacy at an Ontario university.

8.26 The Committee therefore recommends that, by the 1991 academic year, the faculties of medicine and pharmacy at the University of Toronto jointly instruct students in patient-oriented services, including choice of drug therapy, monitoring techniques and patient counselling. This recommendation is also directed to the Ministry of Colleges and Universities and the Council of Ontario Faculties of Medicine as a requirement for the establishment of an additional faculty of pharmacy.

8.27 The Committee therefore recommends that the Ministry of Colleges and Universities reach an early decision regarding the planning of such a health science centre in northern Ontario.

8.28 The Committee therefore recommends that, by the end of 1991, the faculty of pharmacy, University of Toronto, review its curriculum with a view to increasing the emphasis in communications, patient counselling, therapeutics, drug information, pathophysiology and geriatrics. At the same time, the Ontario College of Pharmacists should review its requirements for continuing education to include courses in pharmacology related to geriatrics and paediatrics, as well as courses in drug information, intravenous admixture, radiopharmacy and total parenteral nutrition.

8.29 The Committee therefore recommends that, by the 1991 academic year, the University of Toronto and the Council of Ontario Universities' Health Science Faculties ensure that training for medical, nursing and pharmacy students include appropriate emphasis on the need to communicate to the patient the importance of proper drug use.

8.30 The Committee therefore recommends that, by 1991, the Ministry of Health, together with the Ontario Hospital Association, the Ontario Association of Non Profit Homes and Services for Seniors and the Ontario Nursing Home Association, review and improve as necessary, medication acquisition, storage, dispensing and administration systems in long term care institutions.

8.31 The Committee therefore recommends that an interdisciplinary committee of the College of Nurses of Ontario, College of Physicians and Surgeons of Ontario and the Ontario College of Pharmacists should be established to determine the appropriate role of the nursing profession in patient counselling.

8.32 The Committee therefore recommends nursing participation in drug utilization review, pharmacy and therapeutics committees.

8.33 The Committee therefore recommends that:

a) There be more continuing education for nurses regarding optimal pharmacotherapy; and

b) The College of Nurses of Ontario be asked to re-examine the nursing curriculum to ensure that a sufficient knowledge of basic therapeutics is included to allow meaningful postgraduate study and experience to make the nurse an effective treatment counsellor.

8.34 The Committee therefore recommends that:

a) The College of Nurses of Ontario clarify and establish standards for basic and continuing education about pharmacotherapy; and

b) The Ministry of Health budget sufficient funds to its health care organizations to allow them to fund nurses' participation in ongoing education (i.e. paying the cost of education.)

8.35 The Committee therefore recommends that any organization employing a nurse who administers medication should ensure that a suitable problem-solving mechanism is available in case of dispute over the propriety of treatment.

8.36 The Committee therefore recommends that, in all health care institutions in Ontario, mechanisms be put in place to ensure appropriate patient education regarding treatment plans prior to discharge. Adequate time must be budgeted to allow for this and if it is to be done by nurses then adequate resources must be available to assure the nurse appropriate and ongoing education about pharmacotherapy issues.

8.37 The Committee therefore recommends that, by the end of 1990, the Ontario College of Pharmacists, the Ontario Branch of the Canadian Society of Hospital Pharmacists and the Ontario Hospital Association take steps to ensure that all hospital pharmacies require patient medication profiles in compliance with defined content standards.

8.38 The Committee therefore recommends that the Ministry of Health and the Ontario Hospital Association review the rationale behind the reimbursement policy for Ontario Drug Benefit prescriptions dispensed for hospital outpatients.

8.39 The Committee therefore recommends that by 1991, the Ministry of Health, in cooperation with the Ontario Hospital Association, establish mechanisms to adequately compensate hospitals providing professional pharmacy services to outpatients.

8.40 The Committee therefore recommends that total parenteral nutrition, intravenous antibiotic, analgesic and other home care drug programs be enhanced and expanded through an incentive reimbursement program to be negotiated by 1991 by the Ministry of Health, the Ontario Hospital Association, the Ontario Pharmacists' Association and other interested parties.

8.41 The Committee therefore recommends that by 1991 the Ministry of Health, or other appropriate granting agency, provide the necessary funding to increase both the stipend paid to hospital pharmacy residents and the number of positions available for such residents.

8.42 The Committee therefore recommends that by 1991 the Ontario Hospital Association, the Ontario Medical

Association, the Ministry of Health and the Ontario branch of the Canadian Society of Hospital Pharmacists review the mechanisms for control of investigational drug use for clinical trials in hospitals with a view toward the establishment of standards and ethically appropriate methods of cost containment.

8.43 The Committee therefore recommends that a statutory limitation of liability for administration of medications should be established, in order to relieve associations, and individuals working for such associations under delineated conditions, from liability for administering or monitoring medication in residential settings.

8.44 The Committee therefore recommends that courses in the skills required by health care workers to administer medication and monitor patient compliance in residential settings should be developed and made available through public health care programs.

8.45 The Committee therefore recommends that programs which provide for drug therapy compliance monitoring and drug administration and reminders should be encouraged and funded in community and public health programs.

8.46 The Committee therefore recommends that drug therapy compliance monitoring programs be included as part of the approved programs developed or implemented by community assessment teams, day hospitals and day care centres.

Chapter IX Utilization

9.1 The Committee therefore recommends that low income individuals, or individuals with catastrophic drug costs, who do not have coverage through a private health insurance plan, have drug costs covered through a plan based on an income means test, adjusted for the number of dependents, in accordance with social assistance guidelines, and that copayments should be introduced for individuals and families with incomes above social assistance levels.

9.2 The Committee therefore recommends that recipients of Ontario Drug Benefit plan benefits not on social assistance should be required to participate in the costs of prescriptions. Cost-sharing should be in the form of a fixed charge per prescription of not more than $4. The maximum amount to be paid by the consumer for prescription drugs in any given year should be $250 and any drug costs above that amount should be completely covered by the ODB.

9.3 The Committee therefore recommends that the Ministry of Health, in conjunction with the Council of Faculties of Medicine, take the lead in developing, by 1992, pilot drug utilization review programs that can become an important part of continuing medical education. The goals of these projects would be to determine practical and effective ways of improving the quality of drug prescribing and the health status of patients. Such projects should be supported financially, at arms length, by the province. (See also recommendation 4.6.)

9.4 The Committee therefore recommends that an Ontario adverse drug reaction reporting program be continued and that it should be supported by the province.

9.5 The Committee therefore recommends that the governments of Canada, Ontario and the municipalities set up appropriate mechanisms, properly funded and supported, to attempt to reinforce the social unacceptability of drug abuse.

9.6 The Committee therefore recommends that the Ontario Medical Association, the College of Family Practice and the

Addiction Research Foundation should jointly research the various approaches to reducing the overuse of hypnotics, sedatives and tranquillizers.

9.7 That drug products and other medically indicated drug-related therapy (such as necessary enzymes and vitamins) used in the treatment of cystic fibrosis be funded as benefits under the appropriate Ministry of Health program.

9.8 That drug products and medically-related supplies used in the treatment of thalassemia be funded as benefits under the appropriate Ministry of Health program.

Chapter XI Pharmacotherapy for the Elderly

11.1 The Committee therefore recommends that the Drug Quality and Therapeutics Committee be asked to specifically review the availability of liquid and other formulations of drugs such as iron and acetaminophen for those who have difficulty swallowing or using solid dosage forms.

11.2 The Committee therefore recommends that the smart cards which are to be introduced to facilitate drug utilization, monitoring and review (see recommendation 8.10), be programmed to ensure that problems in pharmacotherapy (e.g. drug interactions) are promptly identified. Electronic communication systems recommended for all pharmacies (see recommendation 8.2) should similarly be programmed to take into account the special problems of prescribing for the elderly. Similar systems should be developed for practising physicians.

11.3 The Committee therefore recommends that the federal Health Protection Branch and the DQTC:

a) be asked to encourage manufacturers to ensure that, whenever it is relevant and feasible, data from drug trials submitted in support of applications for licensing and listing include data from older individuals so that safety and effectiveness in that population can be assessed. Similarly, Ontario faculties of medicine sponsoring drug trials should be asked to include older subjects whenever this is relevant or feasible; and

b) be asked to require pharmaceutical manufacturers to provide specific data and recommendations for prescribing for older patients, where this is relevant.

11.4 The Committee therefore recommends that:

a) The Ministry of Health, with the advice of seniors' organizations, develop guidelines and an information campaign aimed at ensuring that by 1994, all patients, especially the elderly, choose and remain with one personal physician.

b) The Ontario Medical Association, the Ontario Hospital Association and the College of Physicians and Surgeons of Ontario establish guidelines by 1992 to ensure that specialist physicians and hospital clinics meticulously and expeditiously inform a patient's family physician of suggested alterations in the patient's drug regimen.

c) The College of Physicians and Surgeons of Ontario, the College of Family Practice, and the Ontario Medical Association establish guidelines, by 1992, to ensure that primary care physicians maintain and regularly update the older patients' medication list. This information should be shared with other professionals caring for the patient.

d) The Ontario Medical Association and the Ontario Hospital Association, in conjunction with seniors' organizations, establish guidelines by 1991 to communicate to physicians the need to require patients on complicated drug regimens to bring all medications to each visit to any doctor or hospital.

11.5 The Committee therefore recommends that, by 1992, the College of Physicians and Surgeons of Ontario, the Royal College of Dental Surgeons and the Ontario Medical Association develop guidelines in order that prescriptions for hypnotics, sedatives and tranquilizers be issued for the shortest possible time and be clearly marked "no repeats" unless there is a clinical indication to the contrary.

11.6 The Committee therefore recommends that all Ontario faculties of medicine be requested to review their undergraduate and postgraduate curricula, by July 1, 1992, to ensure that:

a) appropriate instruction and experience are provided in prescribing for the elderly, emphasizing the differences from prescribing for younger patients; and

b) all family medicine and specialty postgraduate training programs have specific rotations in geriatric medicine, as appropriate, including supervised pharmacotherapy experience in ambulatory and long-term, as well as acute care settings.

11.7 The Committee therefore recommends that the Ontario Medical Association be asked to review, by January 1, 1992, the adequacy of continuing medical education courses available to Ontario physicians with respect to all aspects of geriatric medicine and pharmacotherapy for the elderly. The OMA, in collaboration with the Ontario faculties of medicine, should be asked to ensure that educational gaps are filled so that Ontario physicians can readily and regularly update their knowledge and skills with respect to caring for and properly prescribing for the elderly.

11.8 The Committee also recommends that the Royal College of Physicians and Surgeons and the College of Family Practice of Canada be requested to review their educational objectives and requirements with regard to geriatric medical education and pharmacotherapy for the elderly.

11.9 The Committee therfore recommends that the Ministry of Health, in conjunction with the Ontario Hospital Association, the Ontario Association of Non Profit Homes and Services for Seniors and the Ontario Nursing Home Association, require that, by July 1, 1992, all acute care hospitals and geriatric long-term care facilities establish appropriate systems to monitor the pharmacotherapy of elderly patients.

Les recommandations du rapport sont présentées par chapitre; tous les chapitres ne renferment pas de recommandations.

Chapitre IV Le Formulaire et le comité d'appréciation des médicaments et des thérapeutiques

4.1 Par conséquent, le comité recommande que le Formulaire du Programme de médicaments gratuits de l'Ontario soit conservé, mais qu'il soit modifié en profondeur.

4.2 Par conséquent, le comité recommande qu'après la publication de l'édition de janvier 1991, le Formulaire soit gelé pour permettre la création d'un formulaire nouveau et allégé. Les avantages cités dans l'édition de janvier 1991 seraient offerts seulement jusqu'à la publication du formulaire allégé; à ce moment, tous les avantages en vigueur prendraient fin et seraient remplacés par les dispositions du nouveau formulaire.

4.3 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques entreprenne immédiatement une révision de tous les produits inscrits actuellement dans le Formulaire, en ce qui a trait à leur efficacité, leur sûreté, leur équivalence et leur coût.

4.4 Par conséquent, le comité recommande la mise au point de mécanismes permettant l'inscription de produits pharmaceutiques sous la recommandation du Comité d'appréciation des médicaments et des thérapeutiques, même lorsqu'aucune demande n'a été présentée par le fabricant.

4.5 Le comité recommande en outre que des dispositions soient prises pour donner au Formulaire un caractère dynamique; les produits provenant de sources multiples et les produits provenant d'une seule source seraient réexaminés régulièrement, pour être conservés, éliminés ou changés de catégorie.

4.6 Par conséquent, le comité recommande que le ministère de la Santé, en collaboration avec le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes d'Ontario, l'Association des médecins de l'Ontario, l'Ordre des pharmaciens de l'Ontario et l'Ontario Pharmacists' Association, lance d'ici le 1er janvier 1992 un programme destiné à surveiller l'utilisation médicamenteuse et accroître la responsabilité des prescripteurs à l'égard de leur pharmacothérapie.

4.7 Par conséquent, le comité recommande que le développement et l'utilisation de produits de sources multiples sous des formes posologiques non usuelles soient

encouragés lorsque cela est possible, en assemblant et en promulguant des critères permettant l'identification et l'inscription de produits interchangeables sous des formes posologiques ou d'administration non usuelles.

4.8 Par conséquent, le comité recommande que le ministère de la Santé, le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes d'Ontario, l'Association des médecins de l'Ontario et le Council of Faculties of Medicine collaborent à la mise au point de mécanismes en vue de promouvoir la prescription de médicaments d'appellation commune, lorsque cela est pertinent.

4.9 Par conséquent, le comité recommande qu'après l'édition de janvier 1991, le ministère discontinue le système actuel de publication du Formulaire, en vertu duquel des échéances semestrielles sont établies, et mette au point pour le remplacer un système permanent de révision des produits.

4.10 Par conséquent, le comité recommande que l'on retienne les services d'un comité consultatif spécialiste en matière de produits, tel que représenté par le Comité d'appréciation des médicaments et des thérapeutiques actuel, avec des attributions semblables à celles déjà établies, compte tenu des modifications proposées à la recommandation 4.11.

4.11 Par conséquent, le comité recommande que le mandat du Comité d'appréciation des médicaments et des thérapeutiques soit révisé d'ici le 1er janvier 1991 et que les points suivants soient examinés :

a) Un mandat élargi permettant une évaluation plus efficace des facteurs de coût des produits pharmaceutiques; et

b) Un mandat élargi, accompagné des ressources appropriées, permettant de surveiller les effets des modifications apportées au Formulaire.

4.12 Par conséquent, le comité recommande que le Ministère et le Comité d'appréciation des médicaments et des thérapeutiques jouent un rôle plus actif en communiquant régulièrement avec les professionnels de la santé pour souligner les avantages du Formulaire et le processus de révision.

4.13 Que le programme d'autorisation spéciale soit discontinué sous sa forme actuelle.

4.14 Que tous les produits pharmaceutiques devant être autorisés aux fins de paiement en vertu du Programme de médicaments gratuits de l'Ontario soient approuvés par le Comité d'appréciation des médicaments et des thérapeutiques. (Voir la recommandation 4.20 sur la période de transition.)

4.15 Que tous les produits pharmaceutiques approuvés aux fins de paiement par le ministère de la Santé soient inscrits dans le Formulaire et que soient précisées les conditions, le cas échéant, auxquelles ils peuvent être couverts en vertu du Programme de médicaments gratuits de l'Ontario.

4.16 Que le Comité d'appréciation des médicaments et des thérapeutiques révise complètement tous les produits pharmaceutiques pour lesquels des autorisations spéciales ont été délivrées. Nous recommandons en outre que ceci soit effectué par ordre de fréquence d'usage (en commençant par le produit le plus couramment utilisé), selon les critères d'inscription au Formulaire. Tous les médicaments approuvés par le Comité d'appréciation des médicaments et des thérapeutiques après cette révision devraient être inscrits dans le

Formulaire. Les médicaments qui ne reçoivent pas l'approbation du comité ne devraient pas être inscrits dans le Formulaire, ni être admissibles aux fins de paiement par le ministère de la Santé.

4.17 Que le Formulaire renferme deux catégories de médicaments : *usage ordinaire* et *usage limité*. Le coût des médicaments *d'usage ordinaire* devrait être remboursé chaque fois qu'ils sont prescrits et dispensés aux personnes admissibles aux programmes de médicaments gratuits de l'Ontario.

L'appellation *usage limité* pourra être accordée aux autres produits pharmaceutiques qui pourront seulement être remboursés à des conditions déterminées par le Comité d'appréciation des médicaments et des thérapeutiques et énoncées dans le Formulaire du programme de médicaments gratuits de l'Ontario. Par exemple, l'appellation *usage limité* peut être accordée lorsqu'au moins une des conditions suivantes est remplie :

a) lorsque les conditions thérapeutiques limitées, déterminées par le Comité d'appréciation des médicaments et des thérapeutiques et énoncées dans le Formulaire du Programme de médicaments gratuits de l'Ontario, ont été remplies;

b) lorsque les médicaments *d'usage ordinaire* ont été essayés et se sont révélés inefficaces ou ont causé des effets indésirables chez un patient particulier; et

c) lorsque des médicaments *d'usage ordinaire* de rechange sont contre-indiqués, en raison d'une thérapie coexistante ou de particularités chez un patient.

Le prescripteur aurait la responsabilité professionnelle de s'assurer que la (les) condition(s) a (ont) été remplie(s).

4.18 Que les conditions et restrictions, le cas échéant, sous lesquelles les médicaments seront autorisés aux fins de remboursement soient clairement indiquées. Ceci peut être fait par des notes en bas de page ou d'autres indications dans le Formulaire.

4.19 Que tous les produits pharmaceutiques pour lesquels des autorisations spéciales ont été délivrées dans le passé, après avoir été revus par le Comité d'appréciation des médicaments et des thérapeutiques, se retrouvent dans seulement une des catégories suivantes :

a) Inscription dans le Formulaire avec l'appellation *usage ordinaire;*

b) Inscription dans le Formulaire avec l'appellation *usage limité;* et

c) Inadmissibilité à un remboursement par le gouvernement de l'Ontario.

4.20 Que pendant la période de transition, jusqu'à ce que le Comité d'appréciation des médicaments et des thérapeutiques ait pu réviser les médicaments pour lesquels des autorisations spéciales ont été délivrées, tous les médicaments sous autorisation spéciale en instance de révision puissent conserver leur autorisation spéciale. On devrait toutefois imposer un strict moratoire sur l'attribution de l'appellation autorisation spéciale à de nouveaux produits.

4.21 Que le Comité d'appréciation des médicaments et des thérapeutiques crée un mécanisme lui permettant d'étudier rapidement les nouveaux produits présentant des progrès thérapeutiques majeurs.

4.22 Par conséquent, le comité recommande que, bien que la ligne de conduite actuelle de l'Ontario sur l'interchangeabilité des médicaments, qui encourage la substitution par des produits d'appellation commune et la compétitivité en matière de prix, soit maintenue.

a) L'Ordre des pharmaciens d'Ontario demande aux pharmaciens de renouveler les ordonnances avec les produits dispensés initialement lorsque leur prix est équiva-lent à celui de produits concurrentiels. (Il est entendu que, lorsqu'il existe une différence substantielle de prix, les pharmaciens dispenseront le produit pharmaceutique à un prix correspondant au niveau auquel ils seront remboursés.)

b) Les ordonnances sans substitution ne soient plus admises au titre du Programme de médicaments gratuits de l'Ontario; lorsque le patient demande que le produit spécifiquement prescrit soit dispensé, il devrait combler l'écart de prix par rapport au produit le moins coûteux pour lequel le pharmacien sera remboursé.

c) Le ministère de la Santé, sur l'avis du Comité d'appréciation des médicaments et des thérapeutiques, établisse un mécanisme par lequel un médecin peut demander qu'un produit particulier soit admis à titre de bénéfice (le coût du produit serait entièrement remboursable au pharmacien) dans les très rares cas où un patient ne peut tolérer le produit le moins cher ou en bénéficier.

d) Les lignes de conduite et, au besoin, la législation soient modifiées afin d'exiger que les pharmaciens informent les patients et les prescripteurs de la substitution d'un produit.

e) Lorsqu'une nouvelle préparation d'appellation commune entre en usage général, le ministère de la Santé exige que le fabricant du produit d'appellation commune diffuse l'information nécessaire aux prescripteurs, tout comme le font maintenant les fabricants de produits novateurs.

4.23 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques soit habilité à examiner les demandes et à faire des recommandations au ministre de la Santé concernant l'interchangeabilité des produits pharmaceutiques, indépendamment de la situation des produits au titre du Programme de médicaments gratuits de l'Ontario. Si l'on juge nécessaire de changer la législation ou les règlements pour que cela soit possible, le changement approprié devrait être institué.

Chapitre V L'acquisition des médicaments

5.1 Par conséquent, le comité recommande que le gouvernement de l'Ontario prenne l'initiative de promouvoir des ententes fédérale-provinciales et interprovinciales en vue d'une ligne de conduite sur l'interchangeabilité à l'échelle du pays. Santé et Bien-être social Canada devrait se voir confier un mandat plus vaste : en plus de confirmer la sûreté et l'efficacité des produits pharmaceutiques, le processus d'approbation devrait également déterminer si le produit est bioéquivalent à d'autres produits approuvés et s'il est interchangeable avec eux.

5.2 Par conséquent, le comité recommande que l'équivalent sous appellation commune d'un produit de marque commerciale ne soit pas inscrit dans le formulaire pour la première fois à un prix supérieur à 60 p. 100 du prix de référence du produit de marque commerciale équivalent. Ce prix de référence sera le prix inscrit du produit de marque commerciale rencontré dans le

formulaire antérieur à celui où le produit d'appellation commune est censé être inclus pour la première fois.

5.3 Par conséquent, le comité recommande que toutes les ordonnances pour des produits de sources multiples à l'intention de prestataires admissibles, indépendamment de leur désignation de produit «sans substitution» par le prescripteur, soient ordinairement remboursés uniquement au "meilleur prix disponible" le plus bas pour le produit. Si le phar-macien, à la demande du patient, dispense un produit dont le prix inscrit dépasse le MPD, le patient devra payer la différence au pharmacien. Le pharmacien peut être remboursé pour une ordonnance «sans substitution» mettant en cause un produit plus coûteux, seulement si le prescripteur a une raison approuvée d'avoir prescrit le produit. (Voir la recommandation 4.21.)

5.4 Par conséquent, le comité recommande que le concept du meilleur prix disponible soit conservé, de préférence à d'autres formes de définition du prix de remboursement aux pharmaciens.

5.5 Par conséquent, le comité recommande que le prix de remboursement de tous les médicaments dans le formulaire de janvier 1991 soit ramené aux prix inscrits dans le formulaire de décembre 1986, plus les augmentations de l'indice des prix à la consommation de décembre 1986 à janvier 1991. Si le produit n'était pas inscrit dans le formulaire de décembre 1986, son prix de janvier 1991 devrait être ramené au prix auquel il a été inscrit pour la première fois après décembre 1986, puis augmenté d'un montant ne pouvant pas dépasser l'augmentation de l'IPC entre cette date et janvier 1991. Si le prix ajusté en fonction de l'IPC est supérieur au prix actuel, le prix actuel devrait être maintenu.

5.6 Par conséquent, le comité recommande que, pour la période commençant avec le Formulaire suivant le formulaire de janvier 1991 et se terminant en janvier 1994, l'augmentation des prix des médicaments inscrits aux fins de remboursement ne dépasse pas 50 p. 100 de l'indice des prix à la consommation.

5.7 Par conséquent, le comité recommande que la législation actuelle soit amendée, avec des sanctions appropriées, pour renforcer le concept du meilleur prix disponible, de sorte qu'on exige des fabricants qu'ils signent une entente irrévocable les obligeant à offrir le format du produit à partir duquel le MPD a été établi, au prix inscrit, à toutes les pharmacies et à tous les grossistes, pendant la durée du Formulaire pertinent.

5.8 Le comité recommande en outre que le ministère de la Santé poursuive énergiquement les allégations de transactions ou de primes offertes par le fabricant, afin de réduire immédiatement le MPD en conséquence, si les allégations sont vraies.

5.9 Le comité recommande également que la législation soit amendée afin d'empêcher les pharmaciens de demander un remboursement (pour la portion du prix de l'ordonnance représentant le coût) en vertu du Programme de médicaments gratuits de l'Ontario, à un niveau supérieur au prix réellement payé pour le produit.

5.10 Le comité recommande en outre que la législation soit amendée de manière à exiger que les pharmaciens, lorsqu'ils dispensent des ordonnances pour des produits interchangeables dans les cas de non-admissibilité au Programme de médicaments gratuits de l'Ontario, réclament pour la portion du prix de l'ordonnance représentant le coût du montant qu'ils ont payé réellement pour le produit, si celui-ci était inférieur au meilleur prix disponible.

Chapitre VI La distribution des médicaments

6.1 Par conséquent, le comité recommande l'établissement de normes minimums pour les services fournis par les grossistes, afin que leurs frais soient admissibles à des remboursements, comme le précise la recommandation 6.2 ci-dessous. Ces normes devraient comprendre la disponibilité ainsi que la distribution rapide et à l'échelle de la province de la plupart des produits de prescription.

6.2 Par conséquent, le comité recommande que, tout de suite après avoir considéré ces recommandations, le ministère de la Santé permette aux grossistes de conclure des ententes de distributeur-agent avec les fabricants.

6.3 Le comité recommande en outre que, pour coïncider avec la date d'entrée en vigueur des honoraires des pharmaciens, qui font actuellement l'objet de nouvelles négociations, le ministère de la Santé prenne des mesures appropriées pour ramener le pourcentage ajouté au meilleur prix disponible à un niveau destiné à dédommager le pharmacien du montant réel qu'il doit payer au grossiste, et pour éliminer complètement le supplément ajouté au MPD pour les ventes directes.

6.4 Par conséquent, le comité recommande que le ministère de la Santé prenne les mesures appropriées pour empêcher toute augmentation du meilleur prix disponible lorsqu'un fabricant de médicaments passe des ventes indirectes aux ventes directes.

6.5 Par conséquent, le comité recommande que dans le cadre de la négociation actuelle sur les honoraires de dispensation, le ministère de la Santé renégocie la structure des honoraires selon laquelle les pharmaciens sont remboursés, pour refléter la diminution du supplément et l'élargissement du rôle professionnel du pharmacien.

6.6 Par conséquent, le comité recommande que, d'ici la fin de 1992, les hôpitaux psychiatriques soient autorisés à utiliser le plan d'achat de groupe de l'Ontario Hospital Association.

6.7 Par conséquent, le comité recommande qu'on retienne les services d'un groupe d'experts-conseils indépendants pour effectuer une vaste vérification de l'organisation et de l'exploitation des services fournis par la Pharmacie du gouvernement, expressément dans le but de :

a) étudier la possibilité que le ministère de la Santé se départisse des fonctions d'acquisition, d'entreposage et de distribution des produits pharmaceutiques, qui sont remplies actuellement par la Pharmacie du gouvernement ou par la Direction de l'approvisionnement et des services, de sorte que ces fonctions soient exécutées par des services du secteur privé, qui existent actuellement ou qui pourront être mis sur pied; ou

b) étudier la possibilité d'améliorer l'efficacité de fonctionnement du système actuel; et

c) développer, avec la participation des groupements intéressés, des solutions de rechange plus efficaces aux services offerts actuellement aux établissements de soins de longue durée; et

d) étudier la création d'un conseil d'administration indépendant provenant du secteur privé pour en surveiller l'exploitation, si on décide de la conserver, sous une forme ou une autre.

6.8 Par conséquent, le comité recommande que les programmes pour la dose unitaire/mixtion intraveineuse soient adoptés comme système de prédilection pour la délivrance de médicaments dans les hôpitaux d'une certaine grosseur.

6.9 Par conséquent, le comité recommande en outre que, d'ici 1991, le ministère de la Santé de l'Ontario et l'Ontario Hospital Association déterminent la grosseur et les autres conditions pertinentes, et que les hôpitaux identifiés reçoivent des subventions pour se convertir au système de dose unitaire.

Chapitre VII La prescription médicamenteuse

7.1 Par conséquent, le comité recommande qu'en tant que partie intégrante d'une thérapie optimale, la pharmacothérapie judicieuse devrait être l'objectif de toutes les parties s'intéressant à l'usage des produits de prescription en Ontario.

7.2 Par conséquent, le comité recommande que le ministère de la Santé invite l'industrie pharmaceutique à examiner conjointement la possibilité de partager le financement d'un centre ontarien pour l'étude de la prescription médicamenteuse. Il serait rattaché à un centre des sciences de la santé et aurait des liens avec des médecins praticiens, par l'entremise du Collège royal des médecins et chirurgiens du Canada, du Collège des médecins de famille du Canada et de l'Association des médecins de l'Ontario, ainsi qu'avec les départements de pharmacologie clinique qui, selon nous, devraient être créés dans chacune des facultés de médecine en Ontario. (Voir la recommandation 7.17)

7.3 Par conséquent, le comité recommande au College of Physicians and Surgeons of Ontario et à l'Association des médecins de l'Ontario d'encourager les prescripteurs à se faire les défenseurs de leurs patients et à être responsables devant eux. D'autre part, la profession médicale a un rôle à jouer dans la protection des ressources de la société.

7.4 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario et le College of Physicians and Surgeons of Ontario, avec la participation de l'Ontario Pharmacists' Association et de l'Ordre des pharmaciens de l'Ontario, étudient conjointement à quel point la quantité de médicaments prescrits dans une ordonnance est pertinente et émettent des lignes de conduite appropriées.

7.5 Par conséquent, le comité recommande au Council of Ontario Faculties of Medicine d'encourager chacune des écoles de médecine de l'Ontario à prendre les mesures suivantes en matière d'enseignement :

a) Des études pilotes pour déterminer l'efficacité des modifications apportées dans les programmes d'enseignement de premier cycle et de deuxième et troisième cycles mettant l'accent sur l'acquisition et le maintien de bonnes habitudes de prescription médicamenteuse;

b) Une meilleure intégration des sciences de base et des sciences cliniques, en particulier l'intégration de la pharmacothérapie à la pharmacologie;

c) Une meilleure reconnaissance par les départements de spécialités cliniques des différences quant aux modèles et aux types de morbidité rencontrés dans les hôpitaux d'enseignement et dans les centres de médecine communautaire;

d) Une plus grande importance de l'évaluation critique des produits pharmaceutiques dans les programmes d'enseignement de la médecine; et

e) Une plus grande importance des besoins particuliers des personnes âgées en matière de traitement de problèmes médicaux (Voir aussi la section 11)

7.6 Par conséquent, le comité recommande que les mesures en matière d'enseignement médical de deuxième et troisième cycle comprennent :

a) L'examen régulier des aspects pharmacologiques de la thérapie;

b) Une meilleure intégration de la pharmacologie clinique dans tous les services, y compris les blocs de chirurgie;

c) L'amélioration des méthodes de vérification quant à l'utilisation des produits de prescription; (Voir également la révision sur l'utilisation médicamenteuse); et

d) Une expérience particulière en gériatrie, au moment de l'internat ou de la résidence.

7.7 Par conséquent, le comité recommande que:

a) Le Council of Ontario Faculties of Medicine, l'Association des médecins de l'Ontario et le College of Physicians and Surgeons of Ontario soient invités, d'ici 1991, à développer des programmes en formation médicale permanente qui soient nouveaux, innovateurs et efficaces, afin d'encourager la participation d'un plus grand nombre de médecins; et

b) Le Council of Ontario Faculties of Medicine, conjointement avec le Comité d'appréciation des médicaments et des thérapeutiques, l'Association canadienne de l'industrie du médicament, l'Association des fabricants de produits pharmaceutiques, Santé et Bien-être social Canada, l'Association pharmaceutique et le ministère de la Santé de l'Ontario soient invités à développer, d'ici 1993, des études d'observation post-marketing innovatrices sur une diversité de préparations pharmaceutiques, tant des produits de marques de commerce que des produits d'appellation commune, et impliquant un grand nombre de médecins de famille.

7.8 Par conséquent, le comité recommande que la profession médicale développe, par l'entremise de ses nombreuses organisations, des règles de conduite pertinentes en matière de traitement.

7.9 Par conséquent, le comité recommande la publication du répertoire intitulé «Choice of Medications - 1990» et que celui-ci soit mis à la disposition, chaque année, de tous les médecins agréés et à toutes les pharmacies en Ontario. Cette publication devrait contenir des directives pour la prescription basées sur des renseignements objectifs concernant les produits pharmaceutiques préférés, y compris leurs indications, contre-indications, effets secondaires, la posologie recommandée et les coûts relatifs.

7.10 Par conséquent, le comité recommande que le ministère de la Santé continue d'être guidé par le Comité d'appréciation des médicaments et des thérapeutiques dans le développement du concept d'usage limité dans le Formulaire du Programme de médicaments gratuits de l'Ontario. (Voir aussi les recommandations 4.2 et 4.3.)

7.11 Par conséquent, le comité recommande que l'Ontario Hospital Association soit invitée à encourager le développement et l'usage de formulaires limités dans les hôpitaux.

7.12 Par conséquent, le comité recommande que le ministère de la Santé, l'Association des médecins de l'Ontario et l'Ontario Pharmacists' Association encouragent la prolongation de la méthode de formulaires limités pour les cliniques de groupe, les maisons de soins infirmiers, les foyers pour personnes âgées, les organisations de maintien de la santé et les organisations de médecine globale.

7.13 Par conséquent, le comité recommande qu'en Ontario, l'usage des noms d'appellation commune des produits pharmaceutiques soit encouragé dans la rédaction des ordonnances et l'étiquetage des médicaments, sauf lorsqu'il existe une raison spéciale d'utiliser un nom de marque de commerce.

7.14 Par conséquent, le comité recommande que le Council of Ontario Faculties of Medicine, le College of Physicians and Surgeons of Ontario et l'Association des médecins de l'Ontario soient invités à faire la promotion de révisions régulières, pertinentes et cohérentes aux pharmacothérapies.

7.15 Par conséquent, le comité recommande que, d'ici 1992, le ministère de la Santé mette sur pied des projets pilotes pour mettre à l'épreuve des façons impartiales de faire des présentations sur les produits en Ontario, d'après le modèle de Harvard. Ceci devrait être précédé par des consultations avec l'Ordre des pharmaciens de l'Ontario, l'Ontario Pharmacists' Association, le College of Physicians and Surgeons of Ontario, l'Association des médecins de l'Ontario et l'industrie pharmaceutique.

7.16 Par conséquent, le comité recommande que, d'ici 1991, le College of Physicians of Ontario, après avoir consulté l'Association des médecins de l'Ontario et l'industrie pharmaceutique, développe et publie des règles d'éthique pour guider les rapports entre les médecins et l'industrie, ces règles portant également sur la participation de l'industrie à l'éducation médicale permanente.

7.17 Par conséquent, le comité recommande que le ministère des Collèges et Universités soit invité à promouvoir et à financer la mise sur pied d'un département de pharmacologie clinique dans chaque école de médecine de l'Ontario. Ils devraient être étroitement rattachés au centre pour l'étude de la prescription médicamenteuse. (Voir la recommandation 7.2)

7.18 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario, la Société canadienne des pharmaciens d'hôpitaux (section de l'Ontario) et l'Ontario Pharmacists' Association soient invités à créer des mécanismes officiels, aux niveaux provincial et local, qui renforceront les liens professionnels sur les questions relatives à la consultation et la communication avec les patients, ainsi que sur d'autres questions d'intérêt commun. Nous suggérons de mettre l'accent sur la liaison au niveau communautaire, entre particuliers et dans des groupes.

7.19 Par conséquent, le comité endosse la recommandation du groupe d'étude sur la consommation médicale et la prestation des soins médicaux (groupe d'étude Scott) pour la création du Conseil de l'Ontario sur l'évaluation de la technologie médicale, et recommande que parmi ses fonctions, cet organisme examine les nouveaux médicaments très coûteux.

7.20 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques soit invité à réviser tous les produits grand public au titre du Régime de médicaments gratuits de l'Ontario, comme il le fait pour les autres produits de prescription, et que tous les produits grand public inscrits dans le formulaire soient classés parmi les médicaments à usage général ou à usage limité.

Chapitre VIII - Délivrance/administration

8.1 Par conséquent, le comité recommande

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que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario définisse clairement les rôles respectifs du personnel auxiliaire et des pharmaciens et qu'il s'assure que les aides effectuent les tâches techniques, axées sur le produit, tandis que les pharmaciens se concentrent sur les tches axées sur le patient, par exemple surveiller la pharmacothérapie et donner des conseils sur les médicaments aux patients et à d'autres professionnels de la santé. Les stratégies utilisées pour en assurer l'application devraient être associées à la promulgation de normes en matière d'exercice et d'assurance de la compétence.

8.2 Par conséquent, le comité recommande que, d'ici la fin de 1992, le ministère de la Santé, l'Ordre des pharmaciens de l'Ontario et l'Ontario Pharmacists' Association établissent conjointement les exigences portant sur les systèmes de gestion par ordinateur et les directives qui en régissent l'usage, de façon à s'assurer l'accès optimal aux profils des patients et aux programmes relatifs aux interactions indésirables des médicaments. D'autre part, le comité recommande que l'Ordre des pharmaciens de l'Ontario établisse des directives régissant l'exercice en vue de mettre en oeuvre l'utilisation optimale de ce genre de système de gestion des données.

8.3 Par conséquent, le comité recommande que, d'ici la fin de 1990, des normes soient établies pour les produits pharmaceutiques présentés dans ce qu'on appelle des emballages «format délivrance» ou «emballage d'origine». Ces normes devraient assurer qu'aucun emballage d'origine délivré ne devrait créer d'incertitude ou de confusion, gêner les traitements individualisés, entraver l'interchangeabilité des produits pharmaceutiques (aux fins de l'interchangeabilité, les caractéristiques physiques des emballages ne devraient pas être considérés comme étant uniques), ni constituer un outil de commercialisation ou

constituer un outil de commercialisation ou

de promotion (la promotion auprès du public d'une certaine marque ne devrait pas être une caractéristique du graphisme ou de l'étiquetage). Par ailleurs, les emballages devraient obligatoirement répondre aux normes d'un emballage protège-enfants.

8.4 Le comité recommande en outre que le ministère de la Santé, en consultation avec les organismes intéressés appropriés, entame sans tarder des discussion avec la Direction générale de la protection de la santé et Bien-être social Canada pour établir ces normes.

8.5 Par conséquent, le comité recommande que d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario crée un groupe de travail ayant expressément pour but de réaliser l'expansion de la pratique consistant à fournir des étiquettes auxiliaires et d'autres renseignements imprimés sur les produits de prescription, ainsi que le renforcement verbal par le pharmacien à l'intention du patient. Ce groupe de travail devrait inclure un ou des représentant des consommateurs.

8.6 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario encourage la profession à porter une attention toute particulière aux besoins des patients handicapés visuels en utilisant des notices et un graphisme appropriés, à gros caractères, chaque fois que cela est possible dans la préparation de l'étiquetage d'un produit de prescription.

8.7 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario encourage l'utilisation d'étiquettes et d'autres instructions dans la langue que le patient connaît bien, le pharmacien ayant pour responsabilité de donner le renforcement approprié par voie verbale.

8.8 Par conséquent, le comité recommande que, d'ici la fin de 1990, le ministère de la Santé effectue une campagne d'éducation,

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conçue principalement à l'intention des personnes âgées, et recommandant aux patients de choisir une pharmacie pour y obtenir, dans la mesure du possible, tous les services de pharmacie.

8.9 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario réalise l'application de cette tendance volontaire par des règlements exigeant de toutes les pharmacies qu'elles maintiennent des profils pharmaceutiques des patients, conformément à des normes définies quant à leur teneur.

8.10 Par conséquent, le comité recommande que l'Ordre des pharmaciens de l'Ontario, l'Ontario Pharmacists' Association, le ministère de la Santé et d'autres parties intéressées travaillent diligemment à la mise au point de dossiers transférables concernant les dossiers pharmaceutiques des patients, par exemple sous forme de «cartes à mémoire».

8.11 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Association des médecins de l'Ontario, le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes d'Ontario, l'Ontario Pharmacists' Association et l'Ordre des pharmaciens de l'Ontario élaborent des directives pour s'assurer que le pharmacien, lorsque cela est approprié au point de vue clinique et avec le consentement du patient, ait accès au diagnostic du patient.

8.12 Par conséquent, le comité recommande que, d'ici la fin de 1990, le ministère de la Santé, en collaboration avec les organismes intéressés appropriés, par exemple l'Ontario Pharmacists' Association et l'Ordre des pharmaciens de l'Ontario, organise une campagne pour sensibiliser le public aux services auxquels on peut s'attendre de la part du pharmacien, en mettant l'accent sur ceux consistant à

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donner des renseignements sur l'usage approprié des médicaments.

8.13 Par conséquent, le comité recommande que l'Ordre des pharmaciens de l'Ontario exige que, d'ici la fin de 1991, toutes les pharmacies de l'Ontario aient un endroit convenable pour la consultation, où les patients peuvent discuter de leurs médicaments avec un pharmacien, et cela dans l'intimité et dans un confort relatif.

8.14 Le comité recommande en outre que les pharmaciens exercent davantage de contrôle sur la vente des médicaments en vente libre et que, d'ici la fin de 1991, l'Ordre des pharmaciens de l'Ontario exige que toutes les pharmacies de l'Ontario aient un rayon des produits professionnels, adjacent ou contigu à l'officine, où doivent se trouver tous les médicaments en vente libre. [Cette consigne n'inclut pas les médicaments de la liste «C», qui ne doivent pas être disponibles en libre choix.]

8.15 Par conséquent, le comité recommande que, d'ici la fin de 1991, l'Ordre des pharmaciens de l'Ontario exige l'utilisation, dans la pharmacie, d'enseignes et de matériel imprimé pour avertir le public de l'importance qu'il y a à consulter un pharmacien concernant l'emploi des médicaments en vente libre, surtout lorsqu'on les prend en même temps que des produits de prescription.

8.16 Par conséquent, le comité recommande que, d'ici la fin de 1991, le ministère de la Santé, en collaboration avec l'Ontario Pharmacists' Association, établisse des projets pilotes pour examiner et évaluer des mécanismes de remboursement offerts à titre de solution de rechange qui rémunéreraient le fournisseur de services pharmaceutiques professionnels et qui

seraient indépendants de la vente ou de la délivrance d'un médicament.

8.17 Par conséquent, le comité recommande que, d'ici la fin de 1992, le ministère de la Santé, conjointement avec l'Ontario Pharmacists' Association, l'Ordre des pharmaciens de l'Ontario et l'Ontario Hospital Association, crée un lien entre les dossiers pharmaceutiques des patients dans les pharmacies de la communauté et les pharmacies d'hôpital, et qu'ils s'assurent que les consultations qui ont lieu avant l'hospitalisation ou avant le renvoi à domicile du patient soulignent au patient l'importance d'un tel échange de renseignements.

8.18 Par conséquent, le comité recommande que le ministère de la santé, conjointement avec l'Ontario Hospital Association, l'Association des médecins de l'Ontario, l'Ontario Pharmacists' Association, la Société canadienne des pharmaciens d'hôpitaux (section de l'Ontario) et l'Ordre des pharmaciens de l'Ontario encouragent immédiatement l'expansion du rôle clinique des pharmaciens dans l'utilisation accrue des formulaires, de la consultation pharmacocinétique, de la surveillance de la pharmacothérapie et de l'intervention subséquente en cas de besoin.

8.19 Par conséquent, le comité recommande que, d'ici la fin de 1992, les ministères de la Santé et des Services sociaux et communautaires, en collaboration avec l'Association des médecins de l'Ontario, l'Association des maisons de soins infirmiers de l'Ontario, l'Ontario Association of Non Profit Homes and Services for Seniors, l'Ontario Pharmacists' Association et l'Ordre des pharmaciens de l'Ontario, créent des projets pilotes qui font appel aux services de comités communautaires de pharmacothérapie basés sur les modèles existants en établissement.

8.20 Par conséquent, le comité recommande que, d'ici la fin de 1990, le ministère de la Santé et l'Ordre des pharmaciens de l'Ontario s'assurent que l'on encourage, que l'on soutienne et que l'on coordonne les programmes d'information sur les médicaments et qu'on les étende à d'autres professionnels.

8.21 Par conséquent, le comité recommande que, d'ici l'année universitaire 1992, ou au cours de l'année où une nouvelle faculté de pharmacie entrera en fonctions (voir la recommandation 8.22), la Faculté de pharmacie de l'Université de Toronto réduise ses inscriptions au nombre pour lequel elle a été conçue.

8.22 Par conséquent, le comité recommande que, d'ici l'année universitaire 1992, le ministère des Collèges et Universités crée en Ontario une seconde faculté de pharmacie, dont le nombre d'étudiants inscrits serait à peu près équivalent au chiffre réduit de la faculté de Toronto. Il devrait s'agir d'un programme de cinq ans semblable à celui recommandé pour l'Université de Toronto (voir la recommandation 8.23), établi dans une université de l'Ontario possédant un programme de sciences de la santé qui comprend la médecine. Dans la décision de créer cette faculté, on devrait tenir compte du besoin de ces services dans le Nord de l'Ontario, mais le comité croit que les avantages à ce que les facultés de médecine et de pharmacie se trouvent au même endroit ont plus de poids que les considérations géographiques.

8.23 Par conséquent, le comité recommande que, d'ici l'année universitaire 1991, l'Université de Toronto commence un programme d'études de pharmacie de premier cycle de cinq ans, afin de permettre une formation pratique plus structurée et un enseignement accru dans les domaines des communications, de la consultation avec les

patients, de la thérapeutique, de l'information sur les médicaments, de la pathopsychologie et de la gériatrie.

pathopsychologie et de la gériatrie.

8.24 Par conséquent, le comité recommande que le programme de stages pratiques offert aux étudiants et aux internes en pharmacie soit entièrement structuré et qu'il soit intégré au programme de cinq ans recommandé ci-dessus. (Voir la recommandation 8.23.)

8.25 Par conséquent, le comité recommande au ministère des Collèges et Universités que, au cours des deux prochaines années, un programme de doctorat en pharmacie soit créé dans une faculté de pharmacie appropriée d'une université de l'Ontario.

8.26 Par conséquent, le comité recommande que, d'ici l'année universitaire 1991, les facultés de médecine et de pharmacie de l'Université de Toronto enseignent conjointement les étudiants dans le domaine des services axés sur les patients, y compris le choix de la pharmacothérapie, les techniques de surveillance et la consultation avec les patients. Cette recommandation est également adressée au ministère des Collèges et Universités et au Council of Ontario Faculties of Medicine à titre d'exigence pour la création d'une faculté de pharmacie supplémentaire.

8.27 Par conséquent, le comité recommande que le ministère des Collèges et Universités prenne une décision concernant la planification d'un tel centre des sciences de la santé dans le Nord de l'Ontario.

8.28 Par conséquent, le comité recommande que, d'ici la fin de 1990, la Faculté de pharmacie de l'Université de Toronto révise son programme d'études en vue de mettre davantage l'accent sur les communications, la consultation avec les patients, la thérapeutique, l'information sur les médicaments, la pathophysiologie et la gériatrie.

En même temps, l'Ordre des pharmaciens

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de l'Ontario devrait réviser ses exigences en matière d'éducation permanente, de façon à y inclure des cours de pharmacologie relatifs à la gériatrie et à la pédiatrie, de même que des cours sur l'information relative aux médicaments, la mixtion intraveineuse, la radiopharmacie et l'alimentation parentérale totale.

8.29 Par conséquent, le comité recommande que, d'ici l'année universitaire 1991, l'Université de Toronto et le Council of Ontario Universities' Health Science Faculties s'assurent que la formation des étudiants en médecine, en soins infirmiers et en pharmacie comprend un volet qui met l'accent, de façon appropriée, sur la nécessité de communiquer au patient l'importance de l'utilisation appropriée des médicaments.

8.30 Par conséquent, le comité recommande que, d'ici 1991, le ministère de la Santé, conjointement avec l'Ontario Hospital Association, l'Ontario Association of Non Profit Homes and Services for Seniors et l'Association des maisons de soins infirmiers de l'Ontario révisent et améliorent au besoin les systèmes d'acquisition, d'entreposage, de délivrance et d'administration des médicaments dans les établissements pour soins de longue durée.

8.31 Par conséquent, le comité recommande la création d'un comité interdisciplinaire, composé de représentants de l'Ordre des infirmières et infirmiers de l'Ontario, du College of Physicians and Surgeons of Ontario, et de l'Ordre des pharmaciens de l'Ontario, des écoles de soins infirmiers, de médecine et chirurgie et de pharmacie, afin de déterminer le rôle approprié de la profession d'infirmier dans la consultation avec les patients.

8.32 Par conséquent, le comité recommande la participation des soins infirmiers aux comités sur la révision de l'utilisation médicamenteuse, la pharmacie et la thérapeutique.

8.33 Par conséquent, le comité recommande que :

a) L'enseignement permanent des infirmiers concernant la pharmacothérapie optimale soit accru; et

b) L'Ordre des infirmières et infirmiers de l'Ontario soit invité à réexaminer les programmes d'enseignement en soins infirmiers pour s'assurer qu'ils comprennent des connaissances suffisantes en thérapeutique de base, afin de rendre plus significatives les études et les expériences après l'obtention du diplôme, de sorte que l'infirmier devienne un conseiller plus efficace en matière de traitement.

8.34 Par conséquent, le comité recommande que :

a) L'Ordre des infirmières et infirmiers de l'Ontario précise et établisse des normes pour l'enseignement de base et l'éducation permanente concernant la pharmacothérapie; et

b) Le ministère de la Santé budgétise des fonds suffisants pour permettre à ses organisations de soins de santé de financer la participation d'infirmiers à des programmes d'éducation permanente (c.-à-d. les défrayer de leurs dépenses d'éducation).

8.35 Par conséquent, le comité recommande que dans toute organisation où travaille un infirmier administrant des médicaments, il existe un mécanisme approprié pour la recherche de solution dans les cas de désaccord quant à la pertinence des thérapies.

8.36 Par conséquent, le comité recommande que, dans tous les établissements de soins de santé de l'Ontario, on crée des mécanismes pour bien renseigner les patients quant à leur plan de traitement avant leur renvoi à domicile. On doit accorder suffisamment de temps pour ceci; si cette tche incombe aux infirmiers, il faudra prévoir des ressources adéquates pour leur assurer une formation appropriée et permanente concernant la pharmacothérapie.

8.37 Par conséquent, le comité recommande que, d'ici la fin de 1990, l'Ordre des pharmaciens de l'Ontario, la section de l'Ontario de la Société canadienne des pharmaciens d'hôpitaux et l'Ontario Hospital Association prennent des mesures pour s'assurer que toutes les pharmacies d'hôpitaux exigent des profils pharmaceutiques des patients, conformément à des normes définies quant à leur teneur.

8.38 Par conséquent, le comité recommande que le ministèrère de la Santé et l'Ontario Hospital Association révisent le raisonnement derrière la ligne de conduite concernant le remboursement des ordonnances au titre du Programme de médicaments gratuits de l'Ontario dispensées aux malades externes des hôpitaux.

8.39 Par conséquent, le comité recommande que d'ici 1991, le ministère de la Santé, en collaboration avec l'Ontario Hospital Association, crée des mécanismes pour compenser adéquatement les hôpitaux offrant des services pharmaceutiques professionnels aux malades externes.

8.40 Par conséquent, le comité recommande que l'alimentation parentérale totale, les antibiotiques administrés par intraveineuse, les analgésiques et les autres programmes concernant les médicaments pour les soins à domiciles soient améliorés et élargis, grâce à un programme de

remboursement d'encouragement devant être négocié d'ici 1991 par le ministèrère de la Santé, l'Ontario Hospital Association, l'Ontario Pharmacists' Association et d'autres parties en cause.

8.41 Par conséquent, le comité recommande que, d'ici 1991, le ministère de la Santé, ou tout autre organisme approprié chargé d'octroyer des subventions, fournisse les fonds nécessaires pour augmenter tant le traitement des résidents en pharmacie dans les hôpitaux que le nombre de postes disponibles pour ces résidents.

8.42 Par conséquent, le comité recommande que d'ici 1991, l'Ontario Hospital Association, l'Association des médecins de l'Ontario, le ministère de la Santé et la section de l'Ontario de la Société canadienne des pharmaciens d'hôpitaux révisent les mécanismes régissant l'utilisation des médicaments à l'étude pour des essais cliniques dans les hôpitaux, dans l'intention d'établir des normes et de trouver des moyens de limiter les coûts qui soient appropriés du point de vue moral.

8.43 Par conséquent, le comité recommande qu'une limite légale de responsabilité soit établie pour l'administration des médicaments, de sorte que les associations et les personnes à leur service soient déchargées, sous des conditions précises, de leur responsabilité quant à l'administration ou la surveillance des médicaments dans les établissements.

8.44 Par conséquent, le comité recommande que des cours portant sur les qualifications requises par les professionnels de la santé pour administrer les médicaments et surveiller l'observance thérapeutique des patients en établissement soient développés et qu'ils soient offerts dans le cadre de programmes d'hygiène publique.

8.45 Par conséquent, le comité recommande que les programmes prévoyant la surveillance de l'observance pharmacothérapeutique des patients et l'administration des médicaments, et les activités de rappel, soient favorisés et financés dans le cadre de programmes de santé communautaire et d'hygiène publique.

8.46 Par conséquent, le comité recommande que les programmes de surveillance de l'observance pharmacothérapeutique soient inclus dans le cadre des programmes approuvés qui sont développés ou mis en oeuvre par les équipes communautaires d'évaluation, les hôpitaux de jour et les centres pour soins de jour.

Chapitre IX L'utilisation médicamenteuse

9.1 Par conséquent, le comité recommande que les personnes à faibles revenus ou les personnes encourant des frais désastreux en médicaments, qui ne sont pas protégées par des régimes privés d'assurance-maladie, soient défrayées de leurs médicaments par l'entremise d'un régime fondé sur un examen des ressources provenant du revenu, compte tenu d'un ajustement pour le nombre de personnes à charge, conformément aux lignes de conduite de l'aide sociale, et que des co-paiements soient perçus des personnes et des familles dont les revenus dépassent les niveaux d'aide sociale.

9.2 Par conséquent, le comité recommande que les prestataires du Programme de médicaments gratuits de l'Ontario qui ne reçoivent pas d'aide sociale soient tenus de participer aux coûts des ordonnances. Le partage des coûts prendrait la forme d'un montant forfaitaire ne dépassant pas 4 $, à payer pour chaque ordonnance. Le maximum annuel à payer par le consommateur pour des produits de prescription serait fixé

à 250 $. Les frais de médicaments au-delà de ce montant seraient complètement couverts par le Programme de médicaments gratuits de l'Ontario.

9.3 Par conséquent, le comité recommande que le ministère de la Santé, conjointement avec le Council of Ontario Faculties of Medicine, entreprenne le développement, d'ici 1992, de programmes pilotes pour la révision de l'utilisation médicamenteuse, qui pourront devenir un élément important de l'éducation médicale permanente. Ces programmes auraient pour objet d'identifier des moyens pratiques et efficaces d'améliorer la qualité de la prescription médicamenteuse et l'état de santé des patients. De tels projets devraient recevoir l'appui financier, à distance, de la province. (Voir aussi le recommandation 4.6.)

9.4 Par conséquent, le comité recommande qu'un programme d'information sur les réactions indésirables aux médicaments en Ontario soit maintenu et qu'il reçoive l'assistance de la province.

9.5 Par conséquent, le comité recommande que les gouvernements du Canada et de l'Ontario, ainsi que les municipalités, mettent sur pied les mécanismes nécessaires, adéquatement financés et soutenus, pour rendre la toxicomanie aussi socialement indésirable.

9.6 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario, le Collège des médecins de famille du Canada et la Fondation de la recherche sur la toxicomanie effectuent conjointement des recherches sur les diverses méthodes pour réduire l'usage excessif des somnifères, des sédatifs et des tranquillisants.

9.7 Que les produits pharmaceutiques et les autres thérapies médicamenteuses indiquées médicalement (comme les enzymes et les vitamines nécessaires) servant au traitement de la fibrose cystique soient subventionnés au titre du programme pertinent du ministère de la Santé.

9.8 Que les produits pharmaceutiques et autres fournitures médicales servant au traitement de la thalassémie soient subventionnés au titre du programme pertinent du ministère de la Santé.

Chapitre XI La pharmacothérapie des personnes âgées

11.1 Par conséquent, le comité recommande que le Comité d'appréciation des médicaments et des thérapeutiques soit invité à examiner de façon spécifique la disponibilité de formulations liquides ou autres de certains médicaments, comme le fer et l'acétaminophène, à l'intention des personnes qui ont de la difficulté à avaler ou à prendre des médicaments sous forme solide.

11.2 Par conséquent, le comité recommande que les cartes à mémoire, qui seront offertes pour faciliter l'usage, la surveillance et la révision des médicaments (voir la recommandation 8.10), soient programmées de manière à permettre la détection rapide de problèmes de pharmacothérapie (p. ex. des interactions médicamenteuses). Le système de communication électronique recommandé à toutes les pharmacies (voir la recommandation 8.2) devrait aussi être programmé pour tenir compte des problèmes spéciaux concernant la prescription médicamenteuse aux personnes âgées.

11.3 Par conséquent, le comité recommande que la Direction générale de la protection de la santé du gouvernement fédéral et le Comité d'appréciation des médicaments et des thérapeutiques de l'Ontario :

a) soient invités à encourager les fabricants à faire en sorte que, lorsque cela est possible et pertinent, les résultats d'essais de médicaments qui accompagnent les demandes de permis et d'inscription incluent des données provenant de personnes âgées, afin que la sûreté et la l'efficacité du médicament puissent être déterminées pour ce groupe. De même, les facultés de médecine ontariennes qui commanditent des essais de médicaments devraient être invitées à inclure des sujets âgés lorsque cela est possible et pertinent; et

b) soient invités à exiger des fabricants de produits pharmaceutiques qu'ils fournissent des données et des recommandations spécifiques en vue de la prescription aux personnes âgées, lorsque cela est pertinent.

11.4 Par conséquent, le comité recommande que :

a) Le ministère de la Santé, sur l'avis d'organismes pour les personnes âgées, développe des lignes de conduite et une campagne d'information dans le but d'amener, d'ici 1994, tous les patients, et surtout les personnes âgées, à se choisir un médecin personnel et à ne pas en changer.

b) L'Association des médecins de l'Ontario, l'Ontario Hospital Association et le College of Physicians and Surgeons of Ontario établissent d'ici 1992 des lignes de conduite pour assurer que les spécialistes et les cliniques d'hôpitaux informent méticuleusement et rapidement le médecin de famille d'un patient de tout changement suggéré à son régime médicamenteux.

c) Le College of Physicians and Surgeons of Ontario, le Collège des médecins de famille du Canada et l'Association des médecins de l'Ontario établissent, d'ici 1992, des lignes de conduite pour amener les médecins qui dispensent des soins primaires à tenir et à mettre à jour régulièrement une liste des médicaments pris par un patient âgé. Cette information devrait être partagée avec les autres professionnels prenant soin du patient.

d) L'Association des médecins de l'Ontario et l'Ontario Hospital Association, conjointement avec des organisations pour les personnes âgées, établissent d'ici 1991 des règles de conduite pour communiquer aux médecins la nécessité d'exiger des patients ayant un régime médicamenteux complexe qu'ils apportent avec eux tous leurs médicaments à chaque visite à un médecin ou à l'hôpital.

11.5 Par conséquent, le comité recommande que, d'ici 1992, le College of Physicians and Surgeons of Ontario, le Collège royal des chirurgiens dentistes de l'Ontario et l'Ontario Medical Association élaborent des lignes directrices pour que les ordonnances pour les somnifères, les sédatifs et les tranquillisants soient données pour la période la plus courte possible et que les contenants portent clairement le libellé «sans renouvellement» à moins d'une indication clinique contraire.

11.6 Par conséquent, le comité recommande que toutes les facultés de médecine de l'Ontario soient priées de réviser leurs programmes d'enseignement aux niveaux des premier, deuxième et troisième cycles, d'ici le 1er juin 1992, pour s'assurer que :

a) elles offrent l'enseignement et l'expérience nécessaires pour la prescription de médicaments aux personnes âgées, en soulignant les différences par rapport aux jeunes patients; et

b) tous les programmes de formation de deuxièmème et troisième cycles en médecine familiale et dans les spécialités comprennent des rotations spécifiques

en médecine gériatrique, dont une expérience supervisée en pharmacothérapie, dans des établissements pour soins ambulatoires et de longue durée ainsi que dans des établissements pour soins aigus.

11.7 Par conséquent, le comité recommande que l'Association des médecins de l'Ontario soit invitée à réviser, d'ici le 1er janvier 1992, les cours d'éducation permanente offerts aux médecins ontariens, en ce qui concerne tous les aspects de la médecine gériatrique et de la pharmacothérapie pour les personnes âgées, afin de déterminer s'ils sont adéquats. L'Association des médecins de l'Ontario, en collaboration avec les facultés de médecine ontariennes, devrait être invitée à s'assurer que les lacunes sont comblées, de sorte que les médecins ontariens puissent mettre facilement et régulièrement à jour leurs connaissances et leurs compétences concernant les soins aux personnes âgées et la prescription de médicaments pour elles.

11.8 Par conséquent, le comité recommande que le Collègège royal des médecins et chirurgiens du Canada et le Collège des médecins de famille du Canada soient invités à réviser leurs objectifs en éducation et leurs exigences concernant l'enseignement médical en gériatrie et la pharmacothérapie des personnes âgées.

11.9 Par conséquent, le comité recommande que le ministère de la Santé, conjointement avec l'Ontario Hospital Association, l'Ontario Association of Non Profit Homes and Services for Seniors et l'Association des maisons de soins infirmiers de l'Ontario, exige que, d'ici le 1er juillet 1992, tous les hôpitaux pour soins aigus et les établissements pour soins gériatriques de longue durée mettent sur pied des systèmes pertinents pour surveiller la pharmacothérapie des patients âgés.

Annex I
Committee Members and Inquiry Staff

Chairman:

Frederick H. Lowy

Dr. Frederick Lowy, dean of medicine at the University of Toronto from 1980 to 1987, is a professor of psychiatry at that university. In June 1989 Dr. Lowy was appointed the first director of the University of Toronto's new centre for bioethics. A medical graduate of McGill University (1959), Dr. Lowy interned and began residency training in internal medicine at the Royal Victoria Hospital, Montreal. After a period of general practice he undertook psychiatric training at the University of Cincinnati. He returned to Canada to join the staff of the Allan Memorial Institute and the department of psychiatry, McGill University, in 1965.

In 1970 Dr. Lowy became chief of psychiatry at the Ottawa Civic Hospital. In 1974 he moved to Toronto to take up the positions of director and psychiatrist-in-chief at the Clarke Institute and chairman of the department of psychiatry, University of Toronto. He held these positions until he became dean of the faculty of medicine in 1980.

Committee:

Martha Jordan

Martha Jordan, R.N., is staff development coordinator at Rideaucrest Home in Kingston, Ontario. Prior to assuming this position, she worked in various roles in the home, where she evaluated and implemented an up-to-date medication administration system.

Mrs. Jordan was graduated from the Royal Victoria Hospital School of Nursing, Montreal in 1968. Following this she assumed positions at the Toronto Western Hospital and Rockyview Hospital, Calgary, in coronary care, emergency and intensive care.

She holds certificates in gerontological nursing and health care unit administration from St. Lawrence College, Kingston.

Mrs. Jordan is a member of the Ontario Nurses' Association, the Registered Nurses' Association of Ontario, and the Gerontological Nursing Association of Ontario.

Michael Gordon

Dr. Michael Gordon was born in New York City and received his undergraduate degree from Brooklyn College. He completed medical school training at the University of St. Andrews in Scotland and proceeded to do intern training at the Aberdeen City Hospital, Scotland, Rambam Hospital, Haifa, Israel and Boston University Hospital.

His residency training took place at the Royal Victoria Hospital, Montreal, the Hadassah and Shaare Sedek hospitals in Jerusalem and the Toronto General and Mount Sinai hospitals in Toronto. Dr. Gordon is currently medical director of the Baycrest Centre for Geriatric Care, head of the division of geriatrics at Mount Sinai Hospital and associate professor of medicine at the University of Toronto. He is married and has four children.

Richard Moulton

Dr. Richard Moulton is a family physician and educator of family physicians from Fort Frances in rural Northern Ontario where he has lived for 25 years. He was educated in England at Cambridge and London and early on became interested in pharmacology: co-authoring (with D.R. Laurence) the first edition of "Clinical Pharmacology." He moved from academic medicine to family practice and then emigrated to Canada.

He has always been interested and involved in health care planning, medical education and therapeutics. He was a founding member of the Kenora-Rainy River District Health Council and a past-president of the Canadian Association of Medical Clinics. He is currently associate professor of family medicine, University of Western Ontario; board member, Ontario Medical Association; a partner in the Fort Frances Clinic and an active staff member at La Verendrye Hospital, Fort Frances. He is a member and past-chairman of the Ontario Medical Association committee on drugs and pharmacotherapy. The committee runs the adverse drug reaction program and provides "The Drug Report."

Reva Spunt

Reva Spunt, M.S.W., is a medical social worker with a specific interest in the needs of the elderly. Though her employment ranged from immigration and vocational counselling, to medical and social work, her clientele was always predominantly in the older age group.

As coordinator of gerontological services at North York General Hospital she was instrumental in developing programs to serve the needs of the elderly both in hospital and in the community. A day care centre for the frail elderly, an outpatient seniors' assessment service and the seniors' committee of the North York Inter-Agency Council are among the services in place today that were initiated by Mrs. Spunt.

Her private practice, "Seniors' Resource and Consultation Services," now allows Mrs. Spunt to be totally available to elders, their families and institutions on a personal level, through training of staff, and providing lectures and workshops.

Jake J. Thiessen

Jake J. Thiessen, Ph.D. is a pharmacist who gained his professional degree from the University of Manitoba. After completing the M.Sc. degree at the same university, he obtained his doctoral degree from the University of California, San Francisco, specializing in the field of pharmacokinetics.

Dr. Thiessen is currently professor and coordinator of the graduate department in the faculty of pharmacy, University of Toronto. Over the past 17 years his teaching responsibilities have included both undergraduate and graduate pharmacokinetics. As part of his research activities he has supervised numerous graduate students at both the masters and doctoral levels. His independent and collaborative research, funded primarily by organizations like the Canadian Medical Research Council, has examined theoretical pharmacokinetic concepts and practical issues in clinical pharmacotherapy.

Dr. Thiessen has participated in a variety of extra-university activities including teaching assignments in Africa and the Caribbean. He has contributed to the profession of pharmacy as chairman of the Canadian Hospital Pharmacy Residency Board. Dr. Thiessen currently serves the Ontario Minister of Health as chairman of the Drug Quality and Therapeutics Committee.

Donald C. Webster

Donald C. Webster, born in 1930, was raised in Montreal where he attended Lower Canada College. Mr. Webster was graduated with a B.Sc. in mechanical engineering from Princeton University (1951) and attended the Centre d'Etudes Industrielles (1953) in Geneva, Switzerland. Between 1951 and 1956, he held engineering positions with Dominion Engineering Works, CIL, Dupont Canada and Liquifuels Limited. He subsequently embarked upon various venture activities, and is a co-founder of Velcro Industries, Harvey's Foods and Neptune Terminals.

From 1968 to the present he has been chairman of Helix Investments Limited, a venture capital company he co-founded in 1968 and which currently has assets in excess of $120 million.

Mr. Webster is a past director of the National Research Council of Canada and the Royal Ontario Museum. He is currently chairman of Geac Computer Corporation Limited and a director of the following public companies: Anthes Industries Inc., Corel Systems, Helix Circuits Inc., Hyal Pharmaceutical Ltd.; of the following private companies: Canadian General Investments Ltd., Cast Marine Holdings, Interactive Entertainment Inc., Rieder Distillery Ltd., Tolerant Systems Inc., Walker Interactive Inc., Webber Pharmaceuticals Ltd.; and of the following non-profit organizations: Canadian Schizophrenic Foundation and Canadian Psychiatric Research Foundation.

Mr. Webster is a member of the Premier's Council of Ontario.

William Robert Wensley

Bill Wensley is registrar of the Ontario College of Pharmacists, the licencing and regulating body for pharmacy in Ontario. The college is set up under authority of the Ontario Health Disciplines Act and as chief executive officer, Mr. Wensley is responsible for ensuring that suitable procedures are in place and carried out to administer the legislation. The college is involved in many activities, including the licencing of pharmacists, continuing education and drug information as well as accreditation of pharmacies, pharmacy inspections and the general administration of the laws in Ontario regarding the sale of drugs by retail.

Mr. Wensley is a graduate of the faculty of pharmacy, University of Toronto, and holds a masters degree in pharmaceutical manufacturing and business administration, also from the University of Toronto. His experience includes community pharmacy, manufacturing pharmacy, university teaching and pharmacy administration.

He is a former member of the Ontario Council of Health and the Drug Quality and Therapeutics Committee, which are advisory bodies to the Minister of Health. Mr. Wensley has also served on many other university, provincial and federal government committees and boards, including the Senate of the University of Toronto, human resource advisory committees and drug security studies.

Executive Director:

Wendy Kennedy

Ms. Kennedy currently works with the Canadian Public Health Association as project director for the national advisory panel on risk/benefit management of drugs. She has been involved in various aspects of the pharmaceutical industry since 1983: with government through the Eastman Commission and Idea Corporation, and in private industry with Novopharm Limited. Before obtaining her MBA from York University, she practiced law in Alberta, both in general private practice and as corporate in-house counsel. She was graduated from the faculty of law at the University of Alberta in 1975.

Director of Research:

J. Ivan Williams

Jack Williams, research director, is the deputy director of the clinical epidemiology unit at Sunnybrook Health Science centre and professor in the departments of family and community medicine and preventive medicine and biostatistics at the University of Toronto.

After completing his Ph.D. in sociology at Florida State University, he held teaching positions at the universities of Western Ontario and Toronto. He started and directed health care research units at both universities.

Prior to moving to this present position, he was a professor in the department of epidemiology and biostatistics at McGill University and a member of the division of clinical epidemiology at Montreal General Hospital. His research interests include the evaluation of prehospital emergency services, quality of care in family practice, and methods for assessing the quality of life. He has held a number of research grants and has published articles in peer-reviewed journals.

Annex II

Alphabetical List of Briefs/Presentations

The following, in alphabetical order, is the list of briefs and presentations made to the Inquiry. Copies of all briefs are maintained on file with the Ministry of Health of Ontario, and information about obtaining copies should be directed to the drug programs branch of the MOH.

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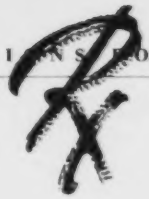

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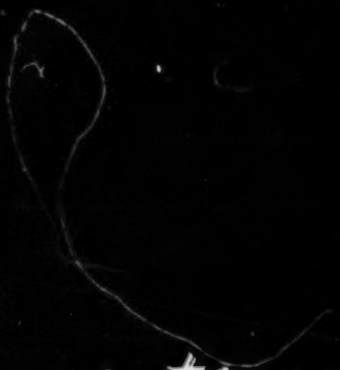

Prescriptions for Health
Recommandations pour la santé

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2. Report on the 1989 Survey of the Dispensing Practices and Attitudes Toward Prescription Drugs of Ontario Pharmacists. R. Cockerill and P. Williams

3. Getting it Right: An Evaluation of Alternative Systems of the Organization on the Ontario Prescription Drugs Distribution System. P.K. Gorecki

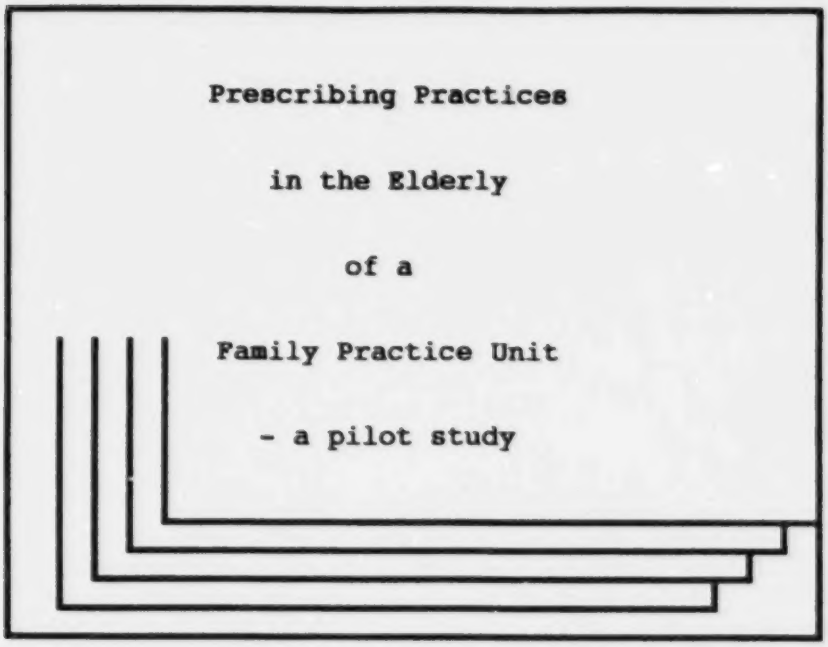
4. Citizen Behaviours to Alleviate Minor or Non Acute Symptoms and Maladies. C. Hart-Zeldin

5. An Examination of Access to Prescription Drugs in Ontario and an Evaluation of Selected Cost-Sharing Policies. J. Hurley

6. Drug Information Sources for the Public. J. Marshall and S. Taylor

7. Report on the 1989 Survey of the Prescribing Experiences and Attitudes Toward Prescription Drugs of Ontario Physicians. A.P. Williams and R. Cockerill

Prescribing Practices in the Elderly of a Family Practice Unit - a pilot study



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PRESCRIBING IN THE ELDERLY

The elderly (over 65 years of age) receive more prescriptions a year than any other age group, (approximately twelve prescriptions per year on the average in one study) (1) and are the most prone to adverse drug reactions.

Data from Saskatchewan has shown that the 25% increase in the use of formulary drugs over a recent ten-year period is mainly due to increased prescribing in the elderly (1). It was found that the increase was mostly in sedative/hypnotics and drugs in the mood-modifying category. Another study from Saskatchewan has shown that the elderly account for 42.6% of such drugs in use, but only 15.7% of that population (3). In one study thiazides were prescribed more than benzodiazepines, followed in frequency by salicylates, digoxin, and codeine, all of which can have significant side-effects and require monitoring (4). The common over-the-counter (OTC) medications prescribed were analgesics, antacids, laxatives, antitussives and expectorants none of which are benign (4). Medication usage in females tends to be higher. This is especially true for benzodiazepines which are prescribed in higher doses, more often, and often more than one at a time (3). Of all prescriptions for persons age sixty to sixty-nine, 50% are for psychoactive drugs. This increases to 56% in the over 70 age group (3).

Eighty percent of all Adverse Drug Reactions (ADRs) are due to the extension of known pharmalogic properties and are avoidable (15). The Ontario Medical Association has shown that 33% of all ADRs are in the over 60-year age group, with 20% in the over 70 age group (16). Of all admissions to hospital due to ADRs, 41% are in the over 60 year age group (17). The major causes of ADRs are poly-pharmacy, self medication, lack of compliance, improper storage, physicians' lack of training in geriatric prescribing and poor supervision of elderly patients, dual prescribing systems in hospitals and in general practice, and increased drug sensitivity in the elderly.

Other studies examined polypharmacy in the elderly (2,4,18-21) Reasons for polypharmacy in the elderly include legitimate health needs, problems inherent in the modern practice of medicine, age grading and age bias of health services,physicians unaware of the volume of medications that they are prescribing to the elderly (especially benzodiazepines), lack of accurate diagnosis, lack of careful drug history, failure to set clear therapeutic goals,

inadequate knowledge of pharmacology, and the need for increased continuing medical education.

A recent British study showed that 23% of some 800 elderly people had been receiving repeat prescriptions for over a year without seeing their GP; 15% of those taking drugs thought they were suffering from drug-related side-effects but most persisted with their treatment. The prescribing habits of the family physicians showed a need for improvement in their choice of medication and dosage and a need for decreased duplications, interactions and contraindications. The study also showed that the physicians did not accurately know even what drugs their patients were supposed to be taking (23).

One study showed a decrease in the prescribing prevalence of digoxin from 24.5% to 13.3% after a brief educational program (22).

BACKGROUND TO CURRENT STUDY

The Family Practice Unit at Toronto General Hospital is a teaching unit affiliated with the Department of Family & Community Medicine, University of Toronto. It consists of two teams of five certified family physicians, and seven Family Medicine residents. 2140 patients are seen monthly, of which 20% are over 65 years.

On-site team physicians are responsible for seeing patients and for repeating prescriptions on behalf of staff physicians or residents who are unavailable. The authors independently became concerned about the quality of prescribing for the elderly in the unit as they attempted to ascertain from charts what medications patients were prescribed. These concerns developed in spite of a Cumulative Patient Profile (CPP) on the inside cover of each chart (Appendix 1). The CPP includes a large area for recording current medications. There was also concern about the number of benzodiazepines and nonsteroidal anti-inflammatory drugs (NSAIDs) being prescribed.

This paper will describe a pilot project undertaken to address concerns about the prescribing, charting and usage of medications for the elderly in an academic family practice unit.

METHODS

Patient Selection

Computer-generated lists of all patients age sixty-five and over seen during the past two years by the ten staff physicians were used as the subject pool. Five patients were randomly selected from each physician's list. If a patient was disqualified from the study, another patient was selected to replace him/her.

Three independent views of chronic medications both prescribed and OTC were looked at for each patient: a chart abstraction; a home visit; and Ontario Drug Benefit (ODB) information.

(1) Chart Abstraction

A chart abstraction form (Appendix 5)listing the 'best guess' as to the patient's chronic medications was completed by the research assistant using the CPP and progress notes from the last three visits. Inter-observer correlation of this 'best guess' list was very high when obtained in this manner. Charts were excluded as shown in Fig. I, Box A. Chart abstraction is a form of internal audit and as such no formal consent was required.

(2) Home Visit

Patients were sent a letter informing them that a nurse employed by the unit might be telephoning them to obtain verbal consent for a home visit to review medication usage.

Home Visit records (Apendix 6A,B) were completed by the research assistant. Data collected included basic demographic and other personal information and prescribed and OTC medications which the patient had on site and/or was actually taking.

Patients were excluded as shown by Fig. 1, Box B and excluded themselves as per Fig. 1, Box C.

(3) Ontario Drug Benefit Information

An ODB abstraction form listing the 'best guess' as to the patient's chronic prescribed medications dispensed by pharmacists and reimbursed through the Drug Benefit Plan one year prior to the most recent entry was completed. This data is presented in chronological order with dispensing date, the generic name of the drugs, the dosage and quantity dispensed (Apendix 2). It can be abstracted cross-sectionally with high inter-observer correlation. An individually signed consent form (Appendix 3) is required by the Ontario Ministry of Health for each ODB printout requested.

Classification of Potentially Undesirable Prescribing (PUP's) and Potentially Undesirable Usage (PUU's)

The team classified PUP's and PUU's into four categories:

I. More than one drug from the same drug family:
e.g. benzodiazepines, NSAIDs, B-Blockers

(Source: J. Ferguson, Ph.D. Doctoral Thesis Epidemiology 1989)

II. Known Drug Interactions:

e.g. digoxin and thiazide/loop diuretic without potassium-supplements; potassium supplement with a potassium-sparing diuretic; lithium and a thiazide; a beta-blocker and verapamil; a potassium-sparing diuretic and an ACE inhibitor.

III. Prolonged Use:

e.g. NSAIDs, Benzodiazepines, codeine or barbiturate-containing compounds prescribed for more than one month.

(Source: authors)

IV. Outdated Indication:

e.g. barbiturate or meprobamate for anxiety. hypertension, or sedation; Dalmane/Halcion in the elderly.

(Source: authors)

Drug Interactions Advisor (DIA)

Each of the forty-seven patients' drug lists (by Home Visit) was entered. This software package uses several references to establish its interaction criteria (e.g. The Medical Letter; Hansten's; Shinn and Shrewsbury). Drugs can be entered using the generic or trade name. Of the six levels of severity [from Nuisance effect (level 1) to Life Threatening (level 6)] level one was chosen in order to capture all possible interactions. The software compared the drugs in pairs starting with the first drug entered paired with each of the subsequent drugs. Subsequent drugs were paired with the drugs that follow them (e.g. if there are four drugs entered A, B, C, D, the analysis is of AB, AC, AD, BC, BD and CD). (Appendix 4)

RESULTS

One hundred-twenty-six (126) charts were surveyed (for entry criterion) in order to obtain forty-seven (47) patients to participate in the pilot project (Fig. 1). Time and financial constraints prohibited completing the assessment on the planned fifty (50) patients.

Seventy-nine charts were eliminated for the reasons listed in Table 1.

The sixteen patients who 'refused' to participate in the home visit (and hence were eliminated from the study) gave reasons as listed in Table 2.

Age/Sex Breakdown

There are 4760 elderly patients in the Family Practice Unit of which 57% are female and 43% are male. Of the forty-seven patients selected for the study, 30 (64%) were female and 17 (36%) were male. The average age of the participant was 78 years. Similar demographics were found for the seventy-nine patients who were excluded: 50 (63%) female and 29 (37%) male, averaging 75 years of age. Analysis for statistical significance was not done, but from a demographic perspective, the two groups appear similar.

Examination for differences between prescribing for the two groups from "chart view" was not performed. Hence no comparison was made between patients who participated and those who were selected out (from researchers' parameters or patient refusal).

Prescriptions by Chart Review

An analysis of the chart abstractions of the forty-seven participants revealed a range of prescriptions from zero to ten with a mean of 4.2 drugs/patient and a standard deviation of 2.1 (Table 3).

Prescriptions by Home Visit

A compilation of all medication each patient acknowledged taking was determined by the research assistant during the home visit. The number of medications ranged from zero to fourteen with a mean of 6.0 and a standard deviation of 2.9. (Table 4).

Medications Most Frequently Charted versus Used

The total number of patients using a specific medication (home visit) was greater than or equal to the number of patients prescribed that medication (chart review) except for hydrochlorothiazide which was found to be used less than charted (Table 5).

Breakdown of PUPs and PUUs

The PUPs (Chart Review) and PUUs (Home Visit) were analyzed by the categories described in the methods section. A summary of the breakdown is given in Table 6.

Patients with no PUUs (n = 25) took on average 5.12 medications. Patients with at least one PUU (n = 22) took an average of 7.00 medications (Fig. 2). Due to the small sample size, analysis for statistical significance was not calculated.

Drug Interactions Advisor

This software program (1987 Edition) was user friendly, gave references for its interactions and gave additional information about some drugs that would be important such as "sedating" or "occasional hypokalemia". It essentially covered Group II interactions in the classification used. It did not include potassium supplements nor did the printout list the last drug entered for each patient.

Ontario Drug Benefits

At the time of this writing a comparison of the ODB printout could not be made with the Home Visit medication list as there is a four month lag time for collection of the ODB data.

The format of the ODB printout provides the date that medications are dispensed, the dosage, format and total quantity dispensed. It does not indicate the prescribing instructions.

DISCUSSION

Of the ninety-four (94) charts that fulfilled the eligibility criteria, forty-seven (47) were entered in the study. Patient selection was done in March 1989 and could have been affected by winter travel. The research assistant's impression was that several factors played a role in patients' refusals including big-city paranoia and the too-busy - healthy - elderly. Analysis of excluded patients' charts was not done. Future studies should analyze all eligible charts re demographics, health status and PUPs.

The average number of medications per patient by chart abstraction and home visit was high (4.2 and 6.0 respectively) as compared to averages reported in the literature. This may be

because many patients enrolled in the Family Practice Unit at Toronto General Hospital are referred from other services of this tertiary care facility and have multisystem disease. They may not be representative of the elderly population in general. An increased average number of medications per patient seems to enhance the probability of PUUs (Fig. 2).

Chart abstraction presented a challenge. Interpretation of the chart was problematic in that often the writing was difficult to decipher. In order to maximize inter-rater reliability, abstraction of the drug list was limited to the CPP and the three most recent progress notes. Other sources of information, e.g. consultants' letters, drug renewal sheets, home care forms were sometimes available but a reliable chart audit cannot depend on these. The 'best guess' medication list was still problematic when compared to the home visit. False positives presented when charts were not revised as medications were discontinued. False negatives occurred when new prescriptions were not charted, when medications were prescribed by other physicians and when patients used borrowed medications or self-purchased OTCs. Although chart abstraction did detect a significant number of PUPs, in general it underestimated the number of medications actually being used. The potential for missing PUUs is self-evident. In this pilot, one third of the PUUs (13/39) were missed on chart abstraction.

The home visit was the 'gold standard' for determining medication use. Home visits are costly and may still underestimate drug use if the patient holds back information.

When reviewing the data re medications most frequently charted versus used, it is important to point out that there need not be correlation i.e. the nine patients on digoxin as per chart review are not necessarily the same nine found to be taking digoxin as per home visit. (Table 5)

There were thirty-nine (39) PUUs overall. These ocurred in twenty-two (22) of the forty-seven (47) study patients. This represents a mean of 0.83 PUUs/patient overall. More importantly, the 22 patients with PUUs averaged 1.77 PUUs/patient.

The majority of the PUUs were in Category III - most notably long term use of benzodiazepines (13/39 PUUs) and NSAIDs (7/39 PUUs). This is unacceptable. It is costly in terms of patients' quality and quantity of life and in terms of health care dollars.

The Drug Interaction Advisor was able to identify Group II PUUs (known drug interactions). It hints at category III PUUs (prolonged use) but if the benzodiazapine is the last medication entered, the warning of potential sedating effects would be lost. It is an interactions advisor and does not detect the majority of PUUs as defined by this study.

ODB printouts provide accurate information re dispensed prescription drugs. The printout does not list medications excluded from the ODB program and although implied, it cannot accurately reflect actual drug usage. Patient consent is presently required. None of the forty-seven subjects denied permission. There are several major concerns: 1) although easy to read, the printout requires interpretation. A software package could reorganize the data to estimate daily drug dosages. 2) there is a four month lag time from drug dispensing to printout availability. 3) the prescribing physician is not listed. These concerns preclude the ODB printouts usefulness as an effective means of monitoring drug use at this time.

FUTURE DIRECTIONS

Studies should be designed to examine interventions which would impact on physicians and/or patient behavior resulting in a decrease in PUPs and PUUs. An important first step may be to develop and test software which will detect current PUPs from ODB data. Issues to be considered include: Is express consent required? which is preferable, continuous or random sample surveys? To whom does information on PUPs go - the physician, the patient or both? What role can education programs play in both physician and patient behaviors re drug prescribing and use, especially as it relates to the Category III problem (e.g. long term use of benzodiazepines and NSAIDs)? Can physicians and/or patients be influenced to use aids such as the Vial-of-Life or SMARTCARD to assure an up-to-date drug list on the patient's chart and in the home? Will there be an impact on the number of PUPs and PUUs if the chart/home list is regularly updated?

This study group hopes to continue investigating these questions in order to impact on drug prescribing and usage in the elderly at the Toronto General Hospital Family Practice Unit. Strategies found to be effective in the Family Practice Unit may be broadly applicable.

Table 1 Reasons for Elimination of Charts

Could not be reached	20	(25%)
Patient Refusal to Participate	16	(20%)
Only Visited Physician Once	15	(19%)
Incorrect Demographics	9	(11%)
Not Located	7	(9%)
Changed Physician or Moved	6	(8%)
Not Available	4	(5%)
Deceased	2	(3%)
	79	(100%)

Table 2 Patient's Reasons for Refusal

Anxiety	5	(31%)
Too Busy	3	(19%)
Language Barrier	2	(13%)
Changed Physicians	2	(13%)
Don't Want to be Bothered	1	(6%)
"House is untidy"	1	(6%)
"I don't take medications"	1	(6%)
"No"	1	(6%)
	16	(100%)

Table 3 Prescriptions by Chart Review

Prescriptions by Chart Review

Number of Drugs Prescribed/Patient	Number of Patients
0	1
1	2
2	7
3	8
4	10
5	9
6	5
7	1
8	2
9	1
10	1
$\bar{x} = 4.2$	47 patients
S.D.= 2.1	

Table 4 Prscriptions by Home Visit

Number of Drugs/Patient	Number of Patients
0	1
1	1
2	3
3	4
4	6
5	5
6	8
7	6
8	6
9	3
10	0
11	2
12	0
13	1
14	1
$\bar{x} = 6.0$ S.D.= 2.9	47 patients

Table 5 Medication Most Frequently Charted Versus Used

Medication	Number of Patients Using Medication	
	Charted	Used
ECASA or ASA	13	23
Benzodiazepines	12	12
Hydrochlorothiazide	10	9
NSAIDs	6	9
Digoxin	9	9
NTG	6	6
Acetaminophen	4	10
Thyroxine	9	9
B Blockers	6	6
Acetaminophen & Codeine	1	6

Table 6 BREAKDOWN OF PUPs AND PUUs

Category I:	PUPs	PUUs
. more than one benzodiazepine	0	2
. more than one NSAID	0	1
Subtotals	0	3

Category II:		
. Riopan in the presence of kidney disease	1	1
. NSAID toxicity with sulfonamide	0	1
. co-administration of beta blockers and nifedipine	2	2
. K+ and K+ - sparing diuretic	1	1
. K+ and ACE inhibitor	1	1
. B-blocker and oral hypoglycemic	1	1
Subtotals	6	7

Category III:		
. Long term benzodiazepine	11	14
. Long term NSAID	4	7
. Long term Codeine	0	2
Subtotals	15	23

Category IV:		
Halcion/Dalmane - poor choice in the elderly	5	6
	26	39

Totals: 26 instances of Potentially Undesirable Prescribing (in 21 patients)
39 instances of Potentially Undesireable Useage (in 22 patients)

Figure 1

Flow Chart of Subject Selection

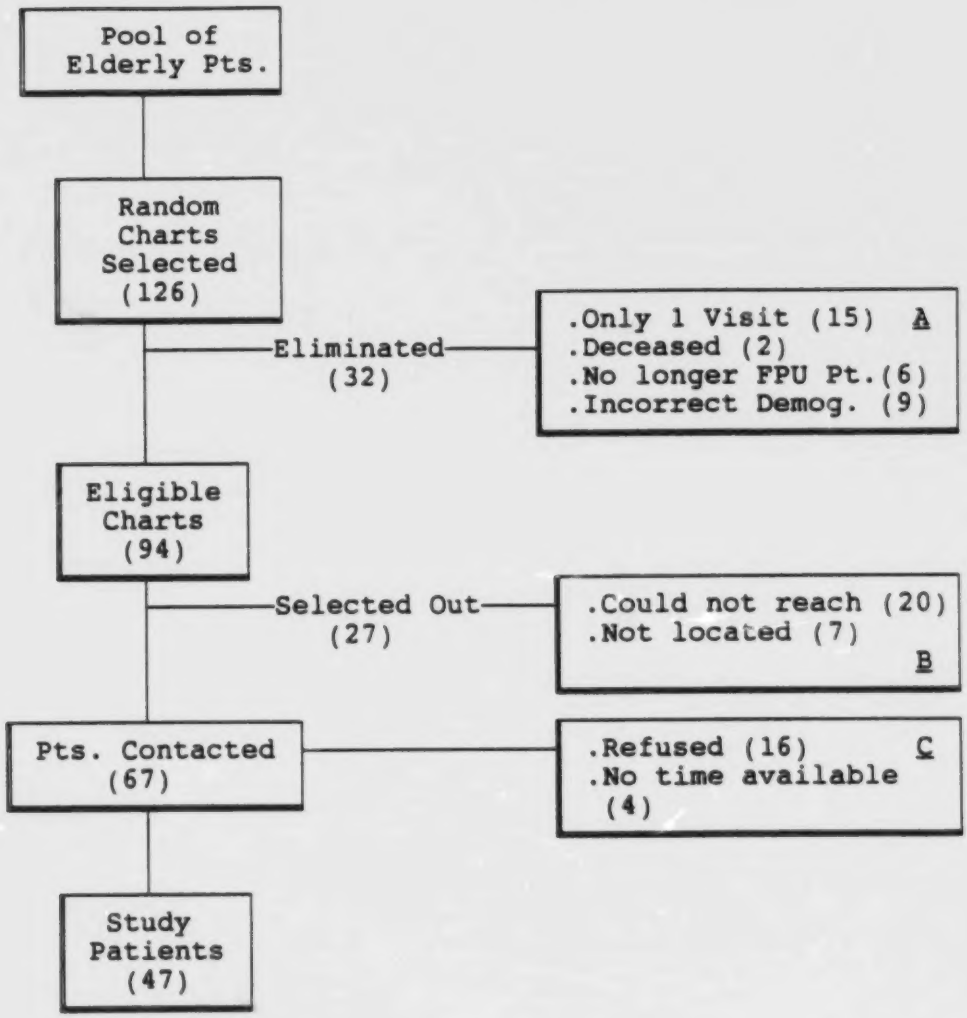
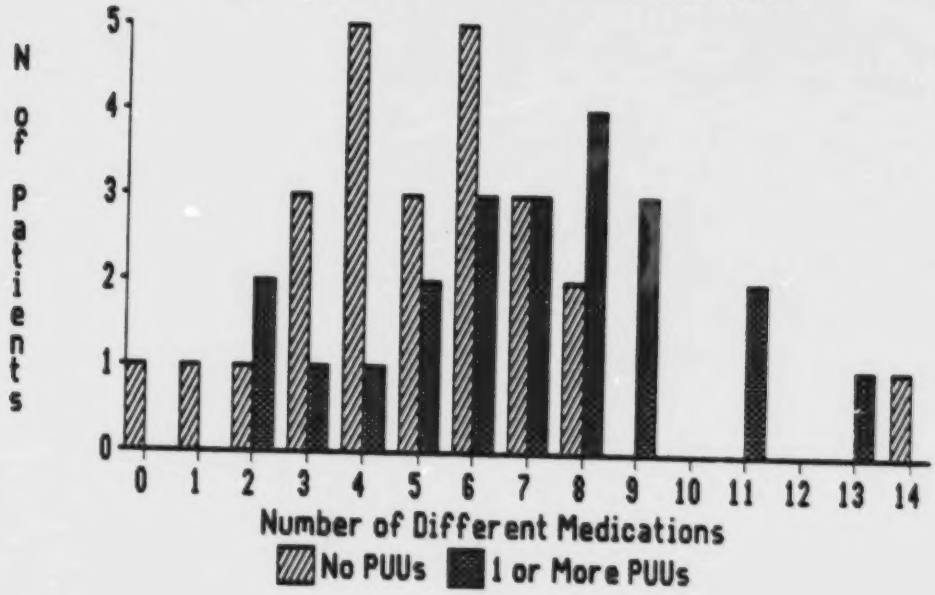


Figure 2: Presence or Absence of PUUs
By Number of Different Medications Taken



Appendix 1

CUMULATIVE PATIENT PROFILE

1. PATIENT IDENTIFICATION

Title Last First

Address

Home Phone Business Phone

Business Address

OHIP No. Sub SIN Chart No

S M Sep D W Other M F DD MM YYYY

2. PERSONAL AND FAMILY DATA Date

3. PAST HISTORY/RISK FACTORS Date

4. ALLERGIES/DRUG REACTIONS Date

5. DATES OF:

Initial Visit

General Assess

Summarized CPP

6. ONGOING HEALTH CONDITIONS Date Record Date Delete

Code

7. IMMUNIZATIONS

Code

8. LONG TERM TREATMENT Date Date

Code

9. CONSULTANTS

10. M.D.

REPORT 1: PRESCRIBING PATTERNS OF THE ELDERLY
TORONTO GENERAL HOSPITAL - FAMILY PRACTICE UNIT

PATIENT NAME	DISPENSING DATE	QUANTITY DISPENSED	GENERIC NAME, STRENGTH, AND DOSAGE	
John Doe #5532716	88/08/16	28	Ampicillin 250mg	Cap
	88/09/08	14	Norfloxacin 400mg	Tab
	88/09/09	30	Digoxin 0.25mg	Tab
		40	Penicillin V (Potassium) 300mg	Tab
		60	Captopril 25mg	Tab
		180	Diltiazem HCl 60mg	Tab
	88/10/11	30	Digoxin 0.25mg	Tab
		40	Penicillin V (Potassium) 300mg	Tab
		60	Captopril 25mg	Tab
		180	Diltiazem HCl 60mg	Tab
	88/10/21	42	Phenazopyridine HCl 200mg	Tab
	88/11/12	30	Digoxin 0.25mg	Tab
		60	Captopril 25mg	Tab
		180	Diltiazem HCl 60mg	Tab
	88/11/17	30	Sulfamethoxazole & Trimethoprim 800mg & 160mg	Tab
	88/12/17	30	Digoxin 0.25mg	Tab

Appendix 3

Consent Form

I _____ hereby authorize the Toronto General Hospital, Family Practice Research Group to involve me in a study where my computerized Ontario drug benefit records will be reviewed. I understand that the medications it listed will be assessed for prescribing quality. They will also be compared to medications in my home and on my doctor's chart.

I understand that this information will be kept completely confidential within the health professionals employed at the Toronto General Hospital Family Practice Unit and my doctor will be informed of any problems that arise.

Dated in Toronto this ___ day of _____ 1989.

_____ _____

Name printed Signature

_____ _____

Witness name Signature

Appendix 4

DRUG INTERACTIONS ADVISOR

List Lookup

:ote: This list was prepared using the November, 1987 version of the database.
The severity level was set at 1 (Nuisance effect).

ITROGLYCERINE

- - - -

Appendix 5 Chart Abstraction Form

TGH FAMILY PRACTICE SERVICE

200 Elizabeth St., Toronto M5G 2C4

PATIENT _____ D.O.B. _____

MED. REC. NO. _____ TELEPHONE _____

MEDICATIONS	DOSAGE/ROUTE/FREQUENCY	COMMENTS

Appendix 6A

Home Visit Record

Patient study # _ _

Chart # _ _ _ _ _ _ _ _ _ _

Name of Patient _____

Sex M1 F2 ☐

Patient's MD:1Bloom2Dawson3Ellingham4Hardacre5Shafir6Sky 7Shirilli8Stubbs9Other ☐

Home visit ever done by MD: 1yes 2no ☐

Postal Code _ _ _ _ _ _

Date of Birth D M YR _ _ _ _ _ _

Date or visit M Yr _ _ _ _

Assessed By: 1TA 2other ☐

Home Supervision of meds:1patient 2relative 3professional 4nonprofessional ☐

Patient lives with: 1Spouse 2child 3 parent ☐

Type of Accomodation: 1apt 2NH 3oldage home 4house 5condo 6other ☐

Is there a suggestion that not all meds have been shown 1yes 2no 3uncertain ☐

Appendix 6B

Home visit record of Medications

Med name _____ Code # _____

Medication: 1Rx 2OTC 3Other ☐

Med used in last week: 1yes 2no ☐

Med used in last month but not in last week: 1yes 2no ☐

Med used in last year but not in last month: 1yes 2no ☐

D M Yr

Last dispensed date __ __ __ Last Rx date __ __ __

Patient factors:
Knowledge: ☐

1. Understands reason and directions for medication
2. Doses not understand what med is for but knows directions
3. Does not know which med should be taken when or why.
4. Has incorrect understanding of what med is for but takes it correctly

MD has explained importance of taking med: 1yes 2no ☐

Does this med bother you in any way: 1yes 2no ☐

Aware of: Side effects: 1could cause 2does cause ☐

Is this med on a list in the patient's possession:1yes 2no ☐

Who makes this list: 1patient 2 Fmd 3other ☐

Med kept in dosette box: 1yes 2no ☐

Rx dose and frequency _____ _____

Actual dose and freq(ask patient)_____

Suspect compliance problem: 1yes 2no, taken as advised ☐
3unable to assess 4uncertain

Who was med Rx by:1FMD 2Other ☐

Physician factors:

Bottle is properly labelled: drug name: 1yes 2no
dose
frequency__ __ indication __ __

Kept in one place with other meds __ __ 1yes 2no ☐
Kept in proper bottle:1yes 2no

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REPORT ON THE 1989 SURVEY OF THE DISPENSING PRACTICES AND ATTITUDES TOWARD PRESCRIPTION DRUGS OF ONTARIO PHARMACISTS

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EXECUTIVE SUMMARY

The Pharmaceutical Inquiry of Ontario, chaired by Dr. Frederick Lowy, was established by the Minister of Health in March, 1988 to undertake an inquiry into all aspects of the government's role and influence in the prescription drug marketplace. Under its terms of reference, the Pharmaceutical Inquiry was given the authority to hold public hearings and to commission research into aspects of drug prescription and utilization. This monograph reports the results of a representative survey of 668 Ontario pharmacists, and documents their experiences with prescription drugs, and their attitudes toward issues and policies related to drug prescribing.

The survey questionnaire explored pharmacists' professional practices, their assessment of the sources and adequacy of information about drugs and drug dispensing available to them, their judgement of factors which might influence the utilization of prescription drugs, and their support of a range of policy strategies to monitor and improve drug prescribing in Ontario. A summary of conclusions drawn from the survey results follows:

1. Most pharmacists practising in Ontario have a baccalaureate degree and almost two-thirds work in community pharmacies. Pharmacists are almost equally split between males and females; however, there is a predominance of males among older pharmacists and a predominance of females among more recent graduates.

2. Almost all community pharmacies have a computerized patient profile system and displays of health related material. However, less than a third have private consulting areas and only about ten percent have audio-visual material available for the public.

3. Pharmacists spend about half of their time dispensing. Pharmacists licensed before 1970 tend to spend more time dispensing, while those licensed after 1980 spend more time on continuing education and consulting with other professionals. Community pharmacists spend more of their time dispensing, selling non-prescription drugs, counselling patients on drug therapies, and third party plan administration. Hospital pharmacists devote a greater proportion of their time to consulting with other professionals, continuing education, business activities and prescription record keeping.

4. Pharmacists report relatively little contact with either prescribers or pharmaceutical company representatives. The majority place few, if any, restrictions on visits by drug company representatives, and they indicate that they have been offered very few benefits from these representatives. In their written comments, and in a question asking about expanded responsibilities, pharmacists indicate that they would like greater contact with prescribers.

5. Pharmacists, especially pharmacists licensed after 1980, are supportive of new or greater responsibilities in counselling and educating patients, health promotion and lifestyle counselling, and monitoring drug treatments. The majority are not interested in home visits.

6. The majority of pharmacists rate their undergraduate pharmaceutical education as inadequate. In terms of specific skills, pharmacists are particularly dissatisfied with their knowledge of the equivalency of therapeutic substitutions, drug interactions and non-drug alternative therapies. Pharmacists licensed after 1980 express a greater dissatisfaction with their knowledge of drug costs.

7. The most important sources of information for pharmacists are the Compendium of Pharmaceuticals and Specialties, journal articles, and drug information centres. Pharmaceutical company representatives and ads and promotional literature are ranked as least important, but even with these sources, approximately a quarter of the pharmacists claimed they are an important, or very important source of information. Pharmacists licensed after 1980 are more likely to rely on journal articles, drug information centres and consultations with prescribers and pharmacists for their drug information.

8. Numerous factors such as inadequate sources of information, rate of introduction of new drugs, and inability to critically assess information were offered to the pharmacists as possible problems affecting their capacity to keep up their knowledge about prescription drugs. None of these factors was ranked as a serious problem for most of the pharmacists surveyed. The most serious problem, mentioned by about half the sample, was lack of time.

9. The majority of pharmacists agree that dispensary assistants (DAs) should be permitted to receive written prescriptions from patients and hand out prescriptions that require no further counselling. About two-thirds of pharmacists licensed after 1980 feel DAs should have some community college training, but less than half of those licensed before 1970 share this view. There is also some disagreement on whether DAs should be permitted to provide information to customers on non-prescription drugs. While the majority of all pharmacists oppose this idea, those licensed after 1970 are more likely to do so.

10. Relatively few pharmacists feel that the Ontario Drug Benefit (ODB) fees should be lower than for the cash marketplace, that fees for renewals should be lower than for new prescriptions, that ODB fees should be lower for over-the-counter drugs, or that fees should be linked to the cost of the drugs. Pharmacists do feel that hospitals should receive the same fees as retail outlets for dispensing out-patient prescriptions and that the ODB Plan should remunerate pharmacists for home visits.

11. Only about half of the pharmacists agree with the current, mandatory practices of posting "usual and customary" fees for interchangeable drugs, and listing both drug cost and the fee charged on all prescription receipts (including ODB recipients and those with third party coverage).

12. A majority of pharmacists are not supportive of co-payments for ODB coverage calculated as a percent of total prescription costs, annual patient co-payments, or making ODB benefits taxable. The option that receives the most support, although by only slightly over fifty percent of the responding pharmacists, is a nominal fixed co-payment for each prescription filled. There are minor differences in responses to this question by year of licensing, with those licensed after 1980 slightly more approving of the options.

13. Only about half of the pharmacists feel there is a potential conflict of interest in pharmacists accepting benefits from pharmaceutical companies, and this percent is significantly lower for those licensed after 1980. Only about half agree that the Ontario College of Pharmacists should set and enforce guidelines for conflict of interest concerning benefits from pharmaceutical companies.

14. The most commonly perceived reasons cited by the pharmacists as leading to higher overall prescription drug costs are an aging population, the availability of new, more effective drugs, and increasing public enrolment in drug plans. Factors seen as less important include drug company profits, lack of information on non-drug therapies, and bioengineered drugs. Very few respondents feel that pharmacists' dispensing fees are an important factor leading to increasing prescription drug costs.

15. A wide range of strategies for monitoring and controlling prescription drug costs in Ontario were offered to pharmacists for their comments. Overall, pharmacists are most supportive of strategies aimed at the public, prescribers and drug manufacturers. Perhaps not surprisingly, they are least supportive of strategies aimed at pharmacists. Pharmacists are supportive of accredited continuing education courses in drugs and drug prescribing aimed at prescribers, regulations requiring drug companies to include information about contraindications, side-effects and costs in their advertisements, and the introduction of drug education programs for all high school students. They are least supportive of a fixed annual fee covering the dispensing costs of all prescriptions to an individual and the expansion of the ODB Plan to cover all Ontario residents.

CHAPTER 1

INTRODUCTION

The Pharmaceutical Inquiry of Ontario, chaired by Dr. Frederick Lowy, was established by the Minister of Health in March, 1988 to undertake an inquiry into all aspects of the government's role and influence in the prescription drug marketplace. The Inquiry's mandate called for an examination of the quality of prescribing, drug benefit program costs, and equity of access to, and distribution of, prescription drugs in Ontario. The Inquiry was established after review of the Goldberg drug utilization report which reported a range of problems associated with drug utilization involving both prescribers and dispensers, as well as consumers.

Under its terms of reference, the Pharmaceutical Inquiry was given the authority to hold public hearings and to commission research into aspects of drug prescription and utilization. Surveys of pharmacists and of physicians were undertaken. This monograph reports the results of the representative survey of Ontario pharmacists; it documents their experiences with prescription drugs, and their attitudes toward issues and policies related to drug prescribing.

Chapter 2 gives details of the representative survey of Ontario pharmacists conducted for the Inquiry. It outlines the process of questionnaire development and discusses the methods used in drawing the sample of pharmacists and techniques employed in checking for possible bias in the survey results. An account of the fieldwork is provided along with details of how the final response rate was estimated.

Chapter 3 presents information describing the professional characteristics of pharmacists in the survey including age, sex, location and nature of training, location and nature of practice, and status with the Ontario College of Pharmacists (OCP). This overview establishes a general demographic profile of responding pharmacists, and identifies a number of variables which may have an independent influence on attitudes toward policies related to drug prescribing. These influencing factors are used throughout the monograph to further clarify patterns of response.

Chapter 4 addresses pharmacists' professional practices. Information is provided on hours worked and prescriptions dispensed, proportion of time in a typical week spent in various professional activities and the extent of consultations with patients, other health professionals and pharmaceutical company representatives. The extent of benefits received from corporate sources is documented in this chapter. Chapter 4 also explores the extent of support for new or greater responsibilities for pharmacists.

Chapter 5 focuses on the sources and adequacy of pharmacists' information about drugs and drug dispensing. This reflects one of the key findings of the Goldberg report on drug utilization (1987) which suggested that continuing professionally related education is one of the most important strategies for confronting the problems associated with inappropriate prescription drug utilization.

Pharmacists' assessments of a range of factors which may influence the utilization of prescription drugs are presented in Chapter 6. Issues explored include policies with respect to professional fees, use of dispensary assistants and acceptance of benefits from pharmaceutical companies. This chapter also presents pharmacists' evaluations of a number of factors which have been suggested as influencing prescribing practices. Of particular interest in the chapter are pharmacists' own views of factors which may have produced a trend toward progressively higher prescription drug utilization rates.

The final chapter of data analysis documents pharmacists' support for a range of policy strategies to monitor and improve drug prescribing in Ontario. Addressed in Chapter 7 are strategies for pharmacists, such as requiring printed information on appropriate use and side-effects to be provided with each prescription; strategies for drug manufacturers, such as licensing of new drugs only if they demonstrate significant improvements over available drugs; as well as strategies for physicians and patients including introduction of a professional review system to monitor prescribing patterns, and introduction of a computerised "smart card" to monitor use.

In Chapter 8, a summary of the survey results is presented and a number of conclusions following from them are offered. The questionnaire used in the survey can be found in

Appendix A and frequency distributions for each variable are in Appendix B. Tables discussed in each Chapter are located at the end of the relevant Chapter; additional tables by the control variables are located in Appendix C.

CHAPTER 2

DATA AND METHODOLOGY

The survey of pharmacists reported in this monograph was conducted under the direction of the investigators with the assistance of the Health Care Research Unit, University of Toronto, between June 1 and August 31, 1989. A six page, self-administered questionnaire was mailed to 1000 pharmacists in Ontario; 946 of these pharmacists were found to be eligible for the survey and completed questionnaires were received from 668, for an effective response rate of 70.6 percent. This chapter provides details of the survey methodology and of the way in which this response rate is calculated.

1. Questionnaire

The questionnaire for the pharmacists' survey was designed in consultation with the Inquiry, the Ontario College of Pharmacists, and the Ontario Pharmacists' Association. Successive drafts of the questionnaire were reviewed by representatives of these organizations who advised both on the general content of the questionnaire and on question wording. Before going to the field, the questionnaire was pretested with pharmacists selected to represent a range of practice settings, and further revisions were made as a result.

The majority of questionnaire items were in the Likert-type format, that is, close ended questions with scale responses. The advantages of this format include ease of response, the relatively low costs of coding and data entry, and the capacity to directly compare responses to related questions. To ensure that pharmacists had the opportunity to express views not explicitly addressed by survey questions, batteries of close-ended items were followed in the questionnaire by open-ended options to provide "other" responses or opinions. As well, the final page of the questionnaire was designed so that pharmacists had sufficient space for any further comments they wished to make. Many pharmacists made use of this option. A copy of the questionnaire can be found in Appendix A.

2. Sample

The initial research design called for a 1/7 or 14 percent selection of the approximately 7,000 practising pharmacists in the province, to yield a sample total of about 1000 pharmacists. Recognizing that up to ten percent of those selected would be ineligible due to death, retirement and migration, the initial selection was anticipated to produce an effective sample of about 900 eligible pharmacists.

The sample was drawn from the complete listing of pharmacists licensed in Ontario and maintained by the Ontario College of Pharmacists. The sample was drawn proportionately by section of register (owner, manager or employee) and by electoral province of workplace. Initial analysis indicated that this sampling frame would yield sufficient statistical power to conduct comparisons between subgroups defined by gender, age, and setting of practice, and thus no oversampling of specific groups was undertaken.

3. Data Collection

The survey design called for an initial mail contact with each pharmacist, followed, if necessary, by a series of additional contacts.

Each pharmacist could receive up to four mail contacts requesting participation in the survey. The first and third of these consisted of covering letters from the Inquiry and the investigators; a questionnaire; and a prepaid, self-addressed return envelop. The second and fourth mail contacts were reminder cards stressing the importance of the research, asking pharmacists for their cooperation and providing them with a name and number to call if they had questions about the content or aims of the research. (Copies of these documents can be found in Appendix A.)

The first wave of questionnaires was sent out on June 7, 1989. This was followed two weeks later by the first of the reminder cards. On July 6, 1989, second questionnaire packages were mailed to all pharmacists who had not yet responded, followed, again about three weeks later, by reminder cards. By August 31, 1989 (the cut-off date), 668 completed, usable

questionnaires had been returned. In addition, returns indicated that a number of pharmacists in the sample were deceased, no longer practising, or out of the province, making them ineligible for the survey. The effective response rate was 70.6 percent.

4. Representativeness

Although a random sample of the type and size described above should closely approximate the characteristics of the population of Ontario pharmacists as a whole, it is possible that pharmacists responding to the survey could have different characteristics than non-responders. This would introduce bias into the survey results. Although the possibility of significant bias tends to decrease as response rates increase, the demographic characteristics of responders were compared to those of the general population of pharmacists.

The demographic characteristics of pharmacists in this survey were very similar to those of the general population of pharmacists). For instance, the pharmacy degree awarded, year of graduation, location of training, and setting of current practice were all within 5 percentage points of the population estimates. One slight difference was the gender distribution. In 1987, 42 percent of licensed pharmacists were female; however, the estimates mention that this percent is increasing yearly, partly because females represent 60 to 70 percent of the undergraduate student body at schools of pharmacy in Canada. In this survey (conducted in 1989), 52.1 percent of respondents were female. This may represent a slight overrepresentation of females, or may reflect the changing gender profile in pharmacy.

CHAPTER 3

PROFESSIONAL CHARACTERISTICS OF PRACTICE

This initial chapter of data analysis describes the professional characteristics of the pharmacists surveyed. The data set includes 668 valid responses on over fifty questions. (For exact wording of all questions see the questionnaire in Appendix A.)

The majority of the pharmacists surveyed (86.7%) have a Bachelor of Science degree in Pharmacy. About eleven percent have a Phm.B., and less than four percent have either a Master or Doctorate of Pharmacy. For the purposes of comparison, pharmacists are divided into three groups based on the year they first received their license to practice in Ontario (see Table 3.1). These groupings are: those licensed before 1970 (31.3% of sample), those licensed between 1970 and 1980 (37.0% of sample), and those licensed after 1980 (31.7% of sample).

Year of licensing is strongly related to age. More than 75 percent of those licensed before 1970 are over the age of fifty. For those licensed from 1970 to 1980, about 60 percent are in their thirties. And of those licensed after 1980, almost half are under the age of thirty. Year of license proved to be a significant variable in the analysis of attitudes and beliefs and is used throughout the analysis as a control variable.

The sample of pharmacists is almost equally split between males and females (52 percent versus 48 percent, respectively). However, there is substantial variation in these proportions

related to year licensed (see Table 3.1). For those licensed before 1970, more than 70 percent are male. For those licensed after 1980, more than 70 percent are female. Gender is also an important variable in the analysis and is used throughout the report as a control variable.

Most pharmacists in the sample (73%) received their training in Ontario (see Table 3.2). For those licensed prior to 1970, more than 80 percent were trained in Ontario. Of those licensed since 1980, however, a little more than 65 percent have been trained in this province. The shift has been towards those pharmacists trained elsewhere in Canada. About 12 percent of the sample received their pharmaceutical training outside of Canada. Place of training was not an important control variable.

The Ontario College of Pharmacists (OCP) Register divides registrants into owners, managers and employees (see Table 3.3). Slightly less than half of the sample are employees (49 percent), just under 20 percent are owners (17 percent) and over a third are managers (34 percent). There are clear differences in registration status based on year of licensing. Pharmacists licensed before 1970 are more likely to be owners, while pharmacists licensed after 1980 are more likely to be employees. All three groups are equally likely to be managers. This pattern holds when examining the actual position in the pharmacy. Section of registration and/or position in pharmacy were anticipated to be important control variables. By and large, though, differences between these three categories of pharmacists were not large, and any differences that were observed were as likely to stem from age differences. The variable was retained as a control variable, but is not an important intervening factor.

In terms of employment setting (Table 3.4) nearly 60 percent of the responding pharmacists work in the community, more than 35 percent work in hospitals, and just under 5 percent are in other types of pharmacies (industry, government, academia). Again there is a clear pattern based on year of licensing. Older pharmacists are more likely to work in the community, while those licensed after 1980 are more likely to work in hospitals. Employment setting is used throughout the analysis as a control factor.

Of those who work in the community, the majority work in an independent pharmacy (56 percent). The older the pharmacist, the more likely this is the case. Those licensed after 1980 are more likely to work in chains or franchises. Less than 3 percent of the sample are employed in pharmacies located in "warehouses." Nearly 5 percent are in pharmacies that are part of a large department store. Pharmacies in medical buildings employ about 16 percent of the pharmacists and a little less than 30 percent work in pharmacies that are part of a plaza. The majority of pharmacists (47 percent) are in stores that are part of the community.

For the almost 36 percent of the pharmacists surveyed who work in hospital pharmacies, the majority work in hospitals with over 250 beds (34 percent work in hospitals of 250 to 500 beds and 40 percent in hospitals of over 500 beds). Less than 26 percent work in hospitals with fewer than two hundred and fifty beds.

Respondents were asked how many full-time and part-time pharmacists and dispensary assistants (DAs) were employed in their pharmacy. There were significant size differences in these terms between community- and hospital-based staff pharmacists (see Table 3.5). The mean number of full-time pharmacists working in hospitals was 12 and in the community was 2.

The number of full-time dispensary assistants was almost the same, 12 in hospitals and 2 in the community.

The average number of prescriptions (new and refills) dispensed in a typical week for the pharmacies was 991. More than a quarter of the pharmacists worked in pharmacies that dispensed less than 500 prescriptions a week while 10 percent were located in pharmacies dispensing more than 1750 prescriptions weekly. Of the prescriptions dispensed, on average 48 percent were covered by the Ontario Drug Benefit Plan. Twenty percent of pharmacies have 30 percent or less of prescriptions covered by the ODB Plan and just under 20 percent of pharmacies had 60 percent or more of their prescriptions paid for by the ODB Plan.

With regard to pharmacy equipment, the vast majority of pharmacies in which respondents worked had computerized patient profile systems (92 percent) and displays of health related information (87 percent). Nearly a third of the pharmacies had private consultation areas (29 percent) and less than one in six pharmacies used manual patient profile systems (14 percent). Only 12 percent of the pharmacies had public audio-visual information.

In sum, the majority of pharmacists indicate that they have undergraduate university degrees and are employed in community settings. Pharmacists are almost equally split between males and females; however, there is a predominance of males among older pharmacists and a predominance of females among more recent graduates. In terms of registration status with the Ontario College of Pharmacists, half of the sample are classified as employees, 20 percent are owners and the remaining 30 percent are managers. Pharmacists licensed before 1970 are more likely to be owners, while those licensed after 1980 tend to be employees.

One purpose of examining the professional characteristics of pharmacists is to identify important explanatory variables for subsequent analyses. Five variables were chosen as controls: year of license, age, gender, OCP registration status, and setting of employment (community versus hospital). Year of license proved to be the most significant explanatory variable and is used throughout the report as a control variable. It should be recognized, though, that there are strong correlations between it and the other control variables.

TABLE 3.1 AGE AND SEX OF RESPONDENTS BY YEAR LICENSED

	Year Licensed[a]					
	Before 1970	1970-1980	After 1980	Chi Square	Percent of Pharmacists	Number of[b] Pharmacists
Age						
< 30	0%	0%	48.8%		15.5%	101
30 - 39	0%	60.1%	47.8%		37.2%	245
40 - 49	24.3%	34.6%	2.9%	678.9**	21.4%	140
50 - 64	57.8%	4.9%	0.5%		20.1%	132
> 65	18.0%	0.4%	0 %		5.8%	38
Sex						
Female	28.0%	57.1%	70.3%	78.5**	52.1%	346
Male	72.0%	42.9%	29.7%		47.9%	318
Number of Pharmacists	207	245	210	-	-	668
Percent of Pharmacists	31.3%	37.0%	31.7%	-	100%	-

[a] Cell entries are vertical or column percents.

[b] Total N may not add to 668 for each variable due to variation in the number of nonresponses.

** $p \leq .01$

TABLE 3.2 WHERE RECEIVED TRAINING BY YEAR LICENSED

	Year Licensed[a]					
	Before 1970	1970-1980	After 1980	Chi Square	Percent of Pharmacists	Number of[b] Pharmacists
Where Received Training						
Ontario	83.1%	71.2%	65.6%		73.0%	482
Elsewhere in Canada	8.2%	13.6%	23.9%	26.6**	15.1%	100
Outside Canada	8.7%	15.2%	10.5%		11.9%	77

[a] Cell entries are vertical or column percents.

[b] Total N may not add to 668 for each variable due to variation in item non-response.

** $p \leq .01$

TABLE 3.3 SECTION OF OCP REGISTER AND POSITION IN PHARMACY BY YEAR LICENSED

	Year Licensed[a]					
	Before 1970	1970-1980	After 1980	Chi Square	Percent of Pharmacists	N[b]
Section of OCP Register						
Section I - Owner	24.3%	19.7%	6.0%		16.8%	108
Manager	33.7%	34.9%	33.8%	29.7**	34.2%	219
Section II - Employee	42.1%	45.4%	60.2%		49.0%	314
Position in Pharmacy						
Owner	26.1%	31.3%	8.0%		22.9%	95
Franchise	7.0%	6.3%	4.4%		6.0%	25
Shareholder	3.2%	4.2%	4.4%	23.8**	3.9%	16
Non-Owner Manager	21.0%	20.8%	31.0%		23.7%	98
Staff Pharmacist	42.7%	37.5%	52.2%		43.5%	180

[a] Cell entries are vertical or column percents.

[b] Total N may not add to 668 for each variable due to differences in item nonresponse.

** $p \leq .01$.

TABLE 3.4 TYPE AND LOCATION OF PHARMACY BY YEAR LICENSED

	Year Licensed[a]					
	Before 1970	1970-1980	After 1980	Chi Square	Percent of Pharmacists	N[b]
Setting of Pharmacy						
Community	75.6%	56.4%	48.5%		59.6%	385
Hospital	16.8%	39.8%	49.0%	50.8%**	36.0%	230
Other	7.6%	3.7%	2.4%		4.5	29
Type of Pharmacy						
Chain	24.2%	22.4%	38.2%		27.2%	106
Franchise	12.4%	19.4%	20.6%	15.0**	16.9%	66
Independent	63.4%	58.2%	41.2%		55.9%	217
Location of Pharmacy						
Warehouse (Merchandising)	2.0%	2.3%	3.9%		2.6%	10
Part of large Department Store	4.1%	4.5%	5.9%		4.7%	18
Plaza with Front Store	23.8%	27.1%	39.2%	18.2*	29.0%	111
Community	53.7%	42.9%	44.1%		47.5%	181
Medical Building	16.3%	23.3%	6.9%		16.2%	62

[a] Cell entries are vertical or column percents.

[b] Total N may not add to 668 for each variable due to variation in item nonresponse.

** $.01 < p \leq .05$.

* $p \leq .01$.

TABLE 3.5 MEAN NUMBER OF STAFF BY PHARMACY SETTING

	Pharmacy Setting				
	Hospital	Community	F Ratio	Mean of All Pharmacists	N
			Number of Staff		
Pharmacists					
Full time	11.8	1.8	135.4**	5.6	575
Part time	3.1	1.7	35.5**	2.2	407
Dispensary Assistants					
Full time	12.1	1.8	114.4**	5.9	523
Part time	2.4	1.8	6.6**	2.0	420

** $p \leq .01$.

CHAPTER 4

PROFESSIONAL PRACTICES

This chapter documents the professional practices of the pharmacists surveyed, and includes information on hours worked, number of prescriptions dispensed, degree of support for new or greater responsibilities for pharmacists and extent of contact with pharmaceutical company representatives.

On average, pharmacists worked 34.2 hours weekly. Almost 48 percent work between 35 and 40 hours per week, while nearly a quarter work 24 hours or less and 20 percent work 40 hours or more. The mean number of prescriptions dispensed weekly is 335. Nearly 20 percent of the pharmacists dispense 100 or fewer prescriptions, and just over 17 percent dispense 500 or more.

Of the prescriptions dispensed, 61 percent are for interchangeable brands of drugs. Almost 20 percent of pharmacists say that they dispense forty percent or fewer prescriptions using interchangeable brands, while just under 11 percent say that more than eighty percent of the drugs they dispense are for interchangeable brands.

Respondents were asked to estimate the proportion of their time spent during a typical weeks in various activities (see Table 4.1). The average pharmacist spends about half of his/her

time dispensing. The remaining time is divided between a number of activities. In descending order, these are: business activities (12.6 percent); counselling patients on drug therapy (11.0 percent); selling non-prescription drugs (9.6 percent); consulting with other professionals (9.3 percent); continuing education (6.6 percent); third party plan administration (4.2 percent); and prescription record keeping (4.0 percent). Pharmacists licensed before 1970 tend to spend more time dispensing while pharmacists licensed after 1980 spend more time on continuing education and consulting with other professionals (Table C4.1, in Appendix C).

Pharmacists were asked on how many separate occasions during a typical week they engage in various activities (see Table 4.2). The most frequent activity is general counselling of patients, which occurs, on average, 50 times a week. Approximately 36 times weekly, pharmacists make non-prescription recommendations to patients. The remaining activities are carried out ten times or less a week, that is, less often than twice a day. These activities include contacting prescribers about a specific prescription they have ordered, making a therapeutic recommendation to a prescriber, general counselling to prescribers on drug therapy and contact with a pharmaceutical company representative. There are few differences in these patterns by year licensed (see Table C4.2). Pharmacists licensed after 1980 are more likely to have been contacted by a pharmaceutical company representative.

The respondents were asked a number of questions about their contacts with pharmaceutical company representatives (see Table 4.3). More than 60 percent of pharmacies place no restrictions on visits by drug company representatives. Only 1 percent permit no visits. A little more than 38 percent of pharmacies place some restriction on visits. This pattern varies by year licensed, with those pharmacists licensed after 1980 more likely to place some

restrictions on visits. The most common restrictions are not allowing pharmaceutical company representatives into the dispensary, limiting visits to specific days and times, and requiring an appointment.

The survey asked pharmacists on how many separate occasions in the past year they were offered a number of different benefits by pharmaceutical company representatives (see Table 4.4). The results indicate that pharmacists are offered relatively few benefits. On average, in the past year, pharmacists were offered drug samples 7 times, free goods or rebates 5 times, free meals twice, and gifts or bonuses once. Pharmaceutical company representatives offered conference fees, travel expenses and computer equipment less than once a year. The pattern of responses did not vary by any of the control variables other than a greater tendency from pharmacists licensed after 1980 to be offered free meals (see Table C4.3).

There has been some discussion as to whether and how the role of pharmacists should change. Respondents were asked if they approved or disapproved of new or greater responsibilities in a number of areas (see Table 4.5). Pharmacists almost unanimously support new or greater responsibilities in the areas of counselling and educating patients about drugs (94.5 percent approved of greater responsibilities in this area) and monitoring drug treatments (75.5 percent). Smaller, but still substantial majorities approve a greater role in health promotion and lifestyle counselling (64.8 percent), counselling and educating prescribers about drugs (62.6 percent), and therapeutic decision making (57.9 percent). The majority of pharmacists are not interested in home visits (only 29.2 percent want greater responsibilities in this area).

With the exception of the issue of health promotion, there are statistically significant differences in the level of approval for each new or expanded responsibility between the three groups of pharmacists based on year licensed (see Table C4.4). Pharmacists licensed after 1980 indicate higher than average levels of approval for all activities. For instance, whereas only 43.7 percent of pharmacists licensed before 1970 approve of greater responsibilities for counselling and educating prescribers about drugs, 78.0 percent of those licensed after 1980 want this. Similarly, only 54.4 percent of pharmacists licensed before 1970 approve of greater responsibilities for monitoring drug treatments, while the same is true for 89.8 percent of those licensed after 1980.

As mentioned previously, an analysis of some questions was done where the breakdown was on the basis of whether the pharmacists practised in the community or a hospital. There are large differences in the average number of prescriptions dispensed weekly between community- and hospital-based pharmacists. On average, pharmacists in hospitals dispense 170 prescriptions weekly and pharmacists in the community dispense 389 prescriptions per week ($p > .01$). Thus pharmacists practising in the community, on average, dispense more than twice as many prescriptions as their colleagues in hospitals.

There are significant differences in the proportions of time community and hospital pharmacists spend in various work activities (see Table C4.5). Community pharmacists spend more of their time dispensing, selling non-prescription drugs, counselling patients on drug therapies and third party plan administration. Hospital pharmacists devote greater proportions of their time to consulting with other professionals, continuing education, business activities and prescription record keeping. All of these differences are statistically significant.

There are several other results of note. Hospital pharmacists tend to make more than twice as many recommendations to prescribers than their colleagues in the community. And with regard to questions about a changing role for pharmacists with new or greater responsibilities (Table C4.5), with the exception of health promotion, hospital pharmacists are more approving of increased responsibility for their profession than their community colleagues.

TABLE 4.1 PERCENTAGE OF TIME SPENT ON VARIOUS ACTIVITIES

Activity	Mean Percent of Time	Minimum	Maximum	Standard Deviation
Dispensing	50.9%	0	100	22.3
Business activities	9.6%	0	50	15.6
Counselling patients on drug therapy	11.0%	0	85	9.7
Selling non-prescription drugs	9.6%	0	50	7.5
Consulting with other professionals	9.3%	0	80	11.2
Continuing education	6.6%	0	51	5.9
Third party plan administration	4.2%	0	90	7.5
Prescription record keeping	4.0%	0	35	4.7

TABLE 4.2 NUMBER OF TIMES PER WEEK PERFORM ACTIVITY

Activity	Mean Number of Times Per Week	Minimum	Maximum	Standard Deviation
General counselling to patient	49.9	0	900	90.0
Make non-Rx recommendation to patient	35.6	0	750	68.7
Contact prescriber re specific Rx	10.1	0	200	13.9
Make therapeutic recommendations to prescriber	5.0	0	125	9.1
General counselling to prescriber	4.1	0	102	9.1
Contacted by pharmaceutical company representation	4.0	0	61	4.6
Contacted by prescriber re specific Rx		10.1	0	20013.9

TABLE 4.3 RESTRICTIONS ON PHARMACEUTICAL COMPANY REPRESENTATIVE BY YEAR LICENSED

	Year Licensed[a]					
	Before 1970	1970-1980	After 1980	Chi Square	Percent of Pharmacists	N[b]
Visits by Pharmaceutical Company Reps						
No restrictions	72.0%	59.6%	51.87%		60.7%	371
Some restrictions	27.4%	39.0%	47.2%	17.0**	38.3%	232
No visits permitted	0.5%	1.3%	1.0%		1.0%	6

[a] Cell entries are column or vertical percents.

[b] Total N may not be 668 due to variation in item nonresponse.

** $p \leq .01$.

TABLE 4.4 NUMBER OF TIMES OFFERED SPECIFIC BENEFITS BY PHARMACEUTICAL COMPANY REPRESENTATIVE IN PAST YEAR

Benefit	Mean Number of Times Offered	Minimum	Maximum	Standard Deviation
Drug samples	6.6	0	999	48.7
Free goods or rebates	4.7	0	100	10.6
Free meals	2.3	0	12	1.1
Gifts or bonuses	0.9	0	20	2.5
Conference fees	0.2	0	12	1.1
Travel expenses	0.1	0	10	0.7
Computer equipment	0.1	0	4	0.4

TABLE. 4.5 PERCENTAGE APPROVING[a] GREATER RESPONSIBILITY IN VARIOUS AREAS

Area	Percent Approve	Neutral	Percent Disapprove
Counselling and educating patients about drugs	94.5%	4.6%	0.9%
Monitoring drug treatments	75.5%	15.7%	8.8%
Health promotion and lifestyle counselling	64.8%	27.1%	8.1%
Counselling and educating prescribers about drugs	62.7%	27.9%	9.3%
Therapeutic decision-making	57.9%	23.4%	18.8%
Counselling patients and prescriber about non-drug alternative therapies	50.6%	37.3%	12.0%
Home visits	29.2%	36.1%	34.7%

[a] N for each variable may not be 668 due to differences in item nonresponse.

** $p \leq .01$.

CHAPTER 5

INFORMATION SOURCES AND NEEDS

This chapter addresses the information sources and needs of pharmacists, the adequacy of their educational preparation and access to information about drugs and drug dispensing.

5.1 Adequacy of Undergraduate Training

Respondents were asked to rate the adequacy of their undergraduate pharmacy training as preparation for their present work as pharmacists (see Table 5.1). The majority of pharmacists rated their pharmaceutical training as inadequate. Just under sixty percent said that their training was "very" or "somewhat" inadequate while thirty percent rated it adequate. Just over 11 percent were neutral. This pattern of response did not vary by gender or by year of license. Responses were associated with place of employment; community pharmacists were more likely to regard their training as inadequate than their colleagues working in hospitals (65 percent of community pharmacists felt their training was inadequate compared to 48 percent of hospital pharmacists.)

5.2 Satisfaction with Current Levels of Knowledge

The next question asked pharmacists how satisfied or dissatisfied they were with their own current level of knowledge concerning prescription drugs in a number of specific areas such as drug interactions and equivalencies of therapeutic substitutions (see Table 5.1). The majority of pharmacists are satisfied or very satisfied with their level of knowledge about drug effectiveness (69 percent), the equivalency of interchangeable brands of drugs (58 percent), drug costs (56 percent), and the abuse of prescription drugs (56 percent). A little more than 52 percent are satisfied with their knowledge about adverse drug effects and slightly more than 51 percent are satisfied with their knowledge about the needs of special groups like children and the elderly. Less than half of the pharmacists are satisfied or very satisfied with their knowledge of the equivalency of therapeutic substitutions (47 percent), drug interactions (46 percent) and non-drug alternative therapies (31 percent).

Satisfaction with current level of knowledge in these various areas does not vary by gender or by place of employment. In a number of areas, though, there are significant differences associated with year of licensing (see Table C5.1). Pharmacists licensed after 1980 are more satisfied with their knowledge about drug effectiveness, drug interactions and adverse drug effects. Pharmacists licensed before 1970 are more satisfied with their knowledge about drug costs.

5.3 Sources of Professionally-Related Information

Pharmacists obtain professionally-related information from a variety of sources. Respondents were asked to rate how important these sources of information are to them in their work (see Table 5.2). Pharmacists report their most important sources of information are the Compendium of Pharmaceuticals and Specialties (81 percent), journal articles (81 percent), and drug information centres (77 percent). Of some importance are continuing education courses (68 percent), consultations with pharmacists and prescribers (51 percent) and meetings, conferences and seminars (51 percent). Less important sources of information for the pharmacists are the OCP prescribed library (44 percent of respondents said this was an important or very important source of information), audio/visual cassettes (29 percent), pharmaceutical company representatives (25 percent) and ads and promotional literature (17 percent).

There are some statistically significant differences between groups of pharmacists in terms of their sources of information (see Table C5.2). Pharmacists licensed after 1980 are more likely to rely on journal articles, drug information centres and consultations with prescribers and pharmacists for their drug information. Pharmacists licensed before 1970 are more likely to use the Compendium of Pharmaceuticals and Specialties (CPS) and audio/visual cassettes, videos or movies.

Place of practice is also an important distinguishing factor with regard to information sources. Community pharmacists, as compared with hospital pharmacists, are less likely to consider meetings, conferences and seminars as an important information source and more

likely to rate the CPS as important. Hospital pharmacists, on the other hand, are less likely to regard advertisements and promotional literature as important, but are more likely to positively rank consultations with pharmacists and prescribers.

5.4 Factors Affecting Currency of Knowledge

The final question in this section asked the pharmacists how serious a number of factors are as problems affecting their capacity to "keep up" their knowledge about prescription drugs[1] (see Table 5.3). None of the factors asked about are a serious problem for most of the pharmacists surveyed. The most serious problem mentioned is lack of time; just over 50 percent report that this is a problem. Other than this, though, there are few concerns. Few pharmacists feel that inadequate sources of information (18 percent), the inability to critically assess information (18 percent), the introduction of new drugs (15 percent), distrust of available information (9 percent) or the introduction of interchangeables (11 percent) are serious problems.

Neither gender nor setting of practice influence these patterns of results. Pharmacists licensed after 1980 are much less likely than those licensed before 1970 to rate the inability to critically assess information as a serious problem, but they are more likely to say that lack of time is a concern (see Table C5.3).

TABLE 5.1 PERCENT SATISFIED WITH CURRENT LEVEL OF KNOWLEDGE[a]

	Satisfied	Neutral	Dissatisfied
Drug effectiveness	69.5	18.4	12.1
Equivalency of interchangeables	58.2	21.9	19.9
Abuse of Rx drugs	56.3	27.0	16.7
Drug costs	56.0	24.7	19.3
Adverse drug effects	52.3	27.7	20.0
Needs of special group	51.1	33.3	15.6
Equivalency of therapeutic substitutions	47.0	30.5	22.6
Drug interactions	46.3	28.8	24.9
Non-drug alternatives	31.3	37.5	31.2

[a] The original five point scale was recoded into a three point scale. The two dissatisfied scores were classified as "dissatisfied" and the two satisfied scores as "satisfied".

TABLE 5.2 PERCENT RATING[A] SOURCES OF INFORMATION AS IMPORTANT

	Important	Neutral	Not Important
Journal articles	81.0	15.6	3.4
CPS	80.8	15.8	3.5
Drug info centres	77.2	13.3	9.5
Continuing education course	68.3	21.6	10.1
Consultations with pharmacists and prescribers	51.4	30.1	18.5
Meetings, conferences and seminars	51.4	29.6	19.0
OCP prescribed library	44.0	29.5	26.4
Audio/video cassettes	29.2	35.8	35.0
Pharmaceutical company representatives	25.1	40.0	34.8
Ads/promotional material	17.2	36.8	46.0

[A] The original five point scale was recoded into a three-point scale. The two scores on the not important side of the continuum were coded "not important" and the two on the important side were coded "very important".

TABLE 5.3 PERCENT RATING[A] SPECIFIC FACTORS AS PROBLEM AFFECTING ABILITY TO KEEP PROFESSIONAL KNOWLEDGE

Factor	Not a Problem	Neutral	A Serious Problem
Lack of time	17.4	29.8	52.8
Inability to initially assess information	49.7	32.3	18.1
Inadequate sources of information	49.1	32.9	18.0
Introduction of interchangeables	60.5	28.2	11.3
Distrust of available information	64.6	26.8	8.8

[A] The original five point scale was recoded into a three point scale: the two scores on the "not a problem" side of the continuum were coded "not a problem" and the two on the problem side were coded a "serious problem."

CHAPTER 6

PROFESSIONAL ISSUES

This chapter deals with the views of pharmacists concerning a variety of professional issues connected with the utilization of prescription drugs. Issues explored include professional fees, use of dispensary assistants and acceptance of benefits from pharmaceutical companies. Pharmacists' evaluations of factors which may influence prescribing practices and drug costs are also explored in this chapter.

6.1 Role of Dispensary Assistants

Pharmacists were asked a series of questions about the role of dispensary assistants (DAs) (see Table 6.1). Most respondents feel that DAs should be required to wear tags identifying their status (86 percent), that they should be permitted to receive written prescriptions from patients (75 percent) and that they should be permitted to hand out prescriptions that require no further counselling (69 percent). There is less agreement on the issue of training; 55 percent of pharmacists feel that DAs should have at a minimum community college training, however this pattern varies by year of license (see Table C6.1). While 64.1 percent of pharmacists licensed after 1980 feel that DAs should have some community college training, only 47.3 percent of those licensed before 1970 agree with this statement. There is also some disagreement on whether DAs should be permitted to provide information to customers on non-prescription drugs. While the majority (78 percent) of all pharmacists are opposed to this idea,

18.6 percent of those licensed before 1970 feel this is an acceptable practice compared to only 5.3 percent licensed after 1980 (see Table C6.1).

When asked what they feel should be the maximum number of dispensary assistants per pharmacist on any regular daytime shift, the most common response, cited by 58 percent of the sample, is 2 DAs per pharmacist. Of the rest of the respondents, 15 percent feel there should be a one-to-one ratio, 22 percent say three DAs per pharmacist, and 7 percent feel 4 or more DAs per pharmacist is the maximum acceptable.

6.2 Setting and Listing Professional Fees

The next set of questions asked pharmacists their opinions on the setting and listing of professional fees (see Table 6.2). Relatively few pharmacists feel that Ontario Drug Benefit (ODB) fees should be lower than for the cash marketplace (9 percent), that fees for renewals should be lower than for new prescriptions (14 percent), that ODB fees should be lower for over-the-counter drugs (22 percent), or that fees should be linked to the cost of drugs (30 percent). However, a majority of respondents agree that hospitals should receive the same fees as retail outlets for dispensing out-patient prescriptions (66.0 percent) and that the ODB Plan should remunerate pharmacists for home visits (69 percent).

Other questions concerned the listing of professional fees and reflect current, mandatory practices. In most cases, there is limited support for these current practices. Only about half of the respondents agree that "usual and customary" fees for interchangeable drugs should be posted (56 percent), that each prescription receipt should list the drug cost and the fee charged

(49.1 percent), that this practice should apply to ODB recipients (44 percent) or that this practice should apply to individuals with third party coverage (48 percent).

6.3 Patient Co-Payments

In addition to the series of questions on professional fees, pharmacists were asked for their opinions on patient co-payments for ODB coverage (see Table 6.3). There is no overwhelming support for any method of patient co-payment; establishing a nominal fixed co-payment for each prescription filled is supported by 52 percent of pharmacists, establishing co-payments as a percentage of total prescription costs by 39 percent, establishing an annual patient co-payment is approved by 30 percent, and making ODB benefits taxable is approved by only 20 percent. There are some minor differences in responses to this question by year of licensing, with those licensed after 1980 generally more approving of the options listed (see Table C6.3).

6.4 Conflict of Interest

Pharmacists were asked two questions about conflict of interest (see Table 6.3). Half of the responding pharmacists (50 percent) agree that there is a potential conflict of interest in pharmacists accepting benefits from pharmaceutical companies. And nearly 55 percent agree that the Ontario College of Pharmacists should set and enforce guidelines for conflict of interest concerning benefits from pharmaceutical companies. For both questions, pharmacists licensed after 1980 are less likely to agree with these two statements about conflict of interest. Only 38

percent of pharmacists licensed after 1980 feel there is a potential conflict of interest in pharmacists accepting benefits from pharmaceutical companies (see Table C6.3).

6.5 Increasing Drug Costs

Pharmacists were asked a series of questions concerning increasing drug costs. Initially, respondents were told that there have been reports that once older patients receive Ontario Drug Benefits, there is an increase in the number of prescriptions they receive. Pharmacists were asked how often in their experience this happens. The majority of respondents (67 percent) report that in their experience this increase occurs frequently, about a quarter of the respondents (24 percent) say it happens sometimes, and only 9 percent feel it occurs infrequently. While the question implied that the increase in the number of prescriptions was in some measure due to ODB coverage, a number of the pharmacists wrote comments pointing out that at least in part this increase is due to the declining health of older people.

The pharmacists were next asked to rate the importance of a number of factors leading to increasing overall prescription drug costs in Ontario over the past ten years (see Table 6.4). The most commonly perceived reasons cited by the pharmacists as leading to higher costs are an aging population (81 percent report that this is an important or very important factor), the availability of new, more effective drugs (72 percent), and increasing public enrolment in drug plans (62 percent). Factors linked to consumer and physician behaviour are also ranked as relatively important; lack of personal responsibility for health is seen as important or very important by 53 percent of the pharmacists and too little emphasis on preventive care is mentioned by 62 percent. Factors that are seen as less important include drug company profits

(41 percent feel this is an important or very important contributing factor), lack of information on non-drug therapies (34 percent), and bioengineered drugs (32 percent). Perhaps not surprisingly, only 6 percent of respondents feel that pharmacists' dispensing fees are an important factor leading to increasing overall prescription drug costs in Ontario.

There are several statistically significant differences between the different groups of pharmacists (see Table C6.4). Those licensed before 1970 are less likely to rate bioengineered drugs as a very important factor, while those licensed after 1980 are less likely to regard as very important pharmacists' dispensing fees and lack of personal responsibility for health.

The final set of questions related to costs asked pharmacists what percentage of prescriptions that they dispense do they feel are not strictly medically necessary and, of the drugs they are familiar with, what percentage do not produce results commensurate with their cost. The pharmacists claim that approximately 18 percent of the prescriptions they dispense are not strictly necessary and that about 16 percent of the drugs they dispense do not produce results commensurate with their cost. There is no variation in the pattern of responses to these two questions by gender, place of practice or year of license.

TABLE 6.1 PERCENT SUPPORT[a] OF STATEMENTS ABOUT ROLE OF DISPENSARY ASSISTANTS (DAS)

Statement	Agree	Neutral	Disagree
DAs should wear tags identifying	86.0	11.1	2.9
DAs should be permitted to receive written Rxs from patients	74.6	10.5	14.9
DAs should be able to give patients Rxs not requiring counselling	69.2	12.8	18.0
DAs should have at least community college training	55.5	14.7	29.7
DAs should be permitted to provide info customers on nonprescription drugs	11.6	10.7	77.6

[a] The original five-point scale was recoded into a three-print scale: The two disagree scores were classified as "disagree" and the two agree scores as "agree."

TABLE 6.2 PERCENT SUPPORT[a] OF VARIOUS STATEMENTS ABOUT PROFESSIONAL FEES

Statement	Agree	Neutral	Disagree
CDS should remunerate pharmacists for home visits	69.2	22.7	8.0
Hospitals should receive same fee as retail outlets for dispensing outpatient Rxs	66.0	13.9	20.2
Fees should be linked to the cost of drugs	30.5	11.8	57.7
CDS fees should be lower for OTC drugs	22.2	18.6	59.2
Fees for renewals should be lower than for new prescriptions	13.6	13.9	72.5
CDS fees should be lower for cash	9.2	10.0	80.8
Mandatory posting of fees for interchangeables	55.7	19.2	25.1
Mandatory listing on receipt of drug cost and fee	49.0	19.5	31.5
Mandatory listing on receipts to customers customers with third party coverage of fee and drug cost	47.6	23.3	29.1
Mandatory listing on CDS receipts of drug cost and fee	43.9	23.0	33.1

[a] The original five-point scale was recoded into a three-point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve".

TABLE 6.3 PERCENT SUPPORT[a] FOR STATEMENTS ABOUT ODB CO-PAYMENTS AND CONFLICT OF INTEREST

Statement	Agree	Neutral	Disagree
ODP Co-payment			
Nominal fixed co-payment for each Rx	51.9	12.9	35.1
Co-payment as a percentage of Rx costs	39.3	16.2	44.5
Annual patient co-payment	29.6	18.3	52.1
ODB taxable	20.5	15.7	63.8
Conflict of Interest and Pharmaceutical Companies			
Is it a potential conflict to accept benefits	50.0	22.1	27.9
Should OCP set guidelines re conflict of interest	54.6	21.7	23.7

[a] The original five-point scale was recoded into a three-point scale: The two disagree scores were classified as "disagree" and the two agree scores as "agree."

TABLE 6.4 PERCENT RATING FACTORS AS IMPORTANT INFLUENCES ON INCREASED DRUG COSTS BY YEAR LICENSED[a]

	Not Important	Neutral	Very Important
Aging population	3.3	15.4	81.2
Availability of new more effective drugs	5.3	23.1	71.6
Too little emphasis on preventive care	10.0	27.5	62.5
Increasing enrolment in drug plans	13.1	25.2	61.7
Lack of personal responsibility for health	17.0	30.1	52.8
Drug company profits	22.5	36.0	41.5
Lack of info on nondrug therapies	30.8	34.9	34.3
Bioengineered drugs	28.8	38.7	32.6
Pharmacists' fees	67.4	26.0	6.5

[a] The original five point scale was recoded into a three point scale: the two scores on the not important side of the continuum were coded "not important" and the two on the important side were coded "very important".

CHAPTER 7

STRATEGIES AND POLICY OPTIONS

This final chapter of data analysis discusses pharmacists' attitudes towards a number of current and potential policy options for monitoring and controlling prescription drugs in Ontario. The strategies are subdivided into four groups: strategies for pharmacists, drug manufacturers, physicians and patients.

7.1 Strategies Targeted at Pharmacists

The first set of strategies are aimed at pharmacists themselves. Respondents were asked to indicate their degree of approval to seven possible strategies (see Table 7.1). A majority of pharmacists agree that there should be regulations requiring pharmacists to report all suspected cases of "double doctoring" or prescription drug abuse to the physician (74 percent), that there should be a central computerized system for recording and linking information on appropriate use and possible side-effects with each prescription (64 percent) and regulations requiring substitution of lower cost interchangeable products in the absence of a "no sub" order by the physician (58 percent). There is less but still substantial support for regulations requiring pharmacists to notify patients when a drug substitution has occurred (48 percent) and regulations requiring pharmacists to provide printed information on appropriate use and possible side-effects with each prescription (44 percent). There is very little support for the idea

of a fixed annual fee covering the dispensing costs of all prescriptions to an individual (5.2 percent).

There are some differences between groups defined by the control variables (see Table C7.1). In four of the six items there is a tendency for pharmacists licensed after 1980 to be more approving; however, these differences are not all statistically significant. In addition, hospital pharmacists, when compared with their counterparts in the community, tend to be more supportive of these strategies.

7.2 Strategies Targeted at Drug Manufacturers

The next set of policy strategies concern drug manufacturers (see Table 7.2). Pharmacists are very supportive of regulations requiring drug companies to include information about contraindications, side-effects and costs in their advertisements (83 percent of pharmacists approve or strongly approve of this option) and government licensing of new drugs only if they demonstrate significant improvements over available drugs (68 percent). There is somewhat less support for public registration of all benefits over $100 provided by drug companies to physicians, pharmacists or government officials (52 percent approve or strongly approve this option), coverage of only a limited number of products in each category under drug benefit plans (47 percent approve) and elimination of promotional drug sampling to prescribers (44 percent approve). Pharmacists generally do not support legislation to limit to two years drug manufacturers' patent protection (only 15 percent approve of this option).

In all the items targeted at drug manufacturers, pharmacists licensed before 1970 tend to be more approving than those licensed after 1980 (see Table C7.2). This is most noticeably the case with public registration of all benefits over $100. While 61.4 percent of those licensed before 1970 approve of this strategy, this is the case for only 44.9 percent of those licensed after 1980.

7.3 Strategies Targeted at Physicians

The third set of policy options concern physicians (see Table 7.3). The majority of respondents were supportive of all the strategies targeted at physicians. Accredited continuing education courses in drugs and drug prescribing are approved of by 86 percent of pharmacists, introduction of a professional review system to examine prescribing patterns which vary from the norm is approved of by 76 percent, and hospital committees to monitor and review the prescribing practices of physicians with admitting privileges is approved by 71 percent. There is also majority support for random audits of physicians' practice linking clinical diagnosis with drug, dosage and duration of therapy (approved of by 63 percent) and mandatory recording of a physician's ID on prescriptions to facilitate audit and review (approved of by 68 percent).

With the strategies aimed at drug manufacturers, pharmacists licensed before 1970 were generally more supportive. With the items targeted at physicians, the opposite pattern holds (see Table C7.3). Pharmacists licensed after 1980 are more supportive of all of the listed strategies. As one example, while 55.4 percent of pharmacists licensed before 1970 support random audits of physicians' practices, 68.4 percent of those licensed after 1980 do so. Other difference are related to setting of employment. Generally speaking, hospital pharmacists tend

to be more approving of the strategies targeted at physicians than those working in the community.

7.4 Strategies Targeted at Patients

The final set of strategies deal with patients and the OBD Plan (see Table 7.4). Large majorities of pharmacists support the introduction of drug education programs for all high school students (82 percent approve or strongly approve of this option) and the introduction of a computerized smart card containing the patient's medical history and drug use which could be read by doctors and pharmacists (80 percent). There is also substantial support for limiting the number of drugs insured under the ODB Plan (62 percent) and elimination of ODB Plan coverage of over-the-counter drugs (53 percent). There is less support for the expansion of the ODB Plan to cover all Ontario residents (only 11 percent of respondents approve).

There are several statistically significant differences among pharmacists in their responses to these questions (see Table C7.4). Pharmacists licensed before 1970 are more supportive of eliminating coverage of over-the-counter drugs; they are less supportive of limiting the number of drugs insured under the ODB Plan. There are no significant differences by gender or setting of practice on these items.

7.5 Strategies Suggested by Pharmacists

In addition to the options listed above, there was an open-ended question asking pharmacists for other strategies for monitoring and improving drug prescribing in Ontario. Many pharmacists provided written comments. A fair number of them took the time and effort to write fairly lengthy statements of their ideas. A brief summary of some the main themes running through these comments follows.

A large number of the comments concerned the Ontario Drug Benefit Plan. Many pharmacists felt that the OBD Plan is overused and abused, especially for over-the-counter (OTC) drugs. Some suggested eliminating OTCs from plan coverage, while others advocated limiting the number of OTCs insured. Those OTCs most commonly suggested for elimination were laxatives, such as Metamucil, antacids and vitamins. An example of abuse cited by many of the pharmacists was the common practice among some senior citizens of getting a six month supply of Metamucil and sunscreen courtesy of the ODB for a vacation in Florida. It was recommended that there be rigid limitations on drug quantities to patients on the ODB Plan, with a strict thirty day supply limit and controlled renewals.

A number of pharmacists suggested that the ODB Formulary should be made more readily available to prescribers. Many doctors apparently claim that they do not have the Formulary. Prescribers should also be encouraged to be better informed of which drugs are insured and inform patients when drugs are not covered. It was also suggested that the Formulary be reduced.

Many pharmacists would like "no-sub" prescriptions (PC34's) eliminated. If patients would like the brand name, the pharmacists suggest they should pay the difference, unless there is a medical reason for not using the generic. Many "no-sub" patients want the brand name, not because they suffer any ill effects from the generic, but because they believe it to be a superior product.

Some pharmacists suggested that the ODB Plan should be handled by a private company selected by tender. The government should get out of administering a drug benefit plan. A number of the respondents suggested a committee of pharmacists to help the ODB supervise/oversee the Plan. There was also a call for development of a drug use review system, using the ODB data base, which in their view is currently being underutilized.

At least one pharmacist would like to see studies done to empirically determine the bioequivalency of generics. If equivalent, they should be listed as such in the formulary. It was pointed out that manufacturers and drug company representatives are telling many prescribers and pharmacists that generic drugs are inferior. Pharmacists often have no impartial source of information on this matter.

Many feel that the pharmacist-prescriber relationship needs improvement. Pharmacists feel that physicians have a poor understanding of what they actually do, especially in relation to over-the-counter drugs. Frequently, pharmacists believe doctors overprescribe, especially narcotics. They would like physicians to be more accountable for what they prescribe.

One respondent remarked that Ontario is the only province where an agent for a doctor can phone in a prescription. It is his understanding that this contravenes federal laws for narcotics and controlled drugs. Apparently some physicians are unwilling to answer calls from pharmacists and/or discuss drug therapies.

There was also a suggestion that prescribers should have more information on the cost of various drug treatments. A number of pharmacists remarked that it would be useful for prescriptions to list a diagnosis/reason for treatment; this would be extremely useful when counselling patients.

Standardized labelling practices for pharmacists is something a number of the respondents would like to see. Many would also like prescriptions from physicians to be in triplicate, especially for narcotics, with a copy for the doctor, pharmacy and province.

Continuing education (CE) was another popular topic for comment. Many pharmacists carry out their continuing education on their own time as there is no time at work. A large number believe that CE should be mandatory for both prescribers and pharmacists. One respondent suggested co-educational programs. It was recommended that course content on drugs and clinical responses for medical students should be increased. Currently their primary sources of information are practice and drug company representatives. Other topics suggested for prescriber education are the mechanics of third party plans and prescribing from the drug formulary.

Several pharmacists would like to see a fee for refusing to fill a prescription such as they have in Quebec. It was pointed out that there is no financial incentive for pharmacists to counsel patients. One pharmacist felt that annual guaranteed incomes for physicians and pharmacists would help in controlling health care costs.

Another popular area for comment was patient education. Patients and the public need to be educated about the overuse of prescription drugs and the fact that not all ailments require a drug. Patient education needs to focus on lifestyles, especially lifestyle diseases. Many would like to see patients encouraged to use one pharmacy. Pharmacists would also like a more complete database of information about patients.

TABLE 7.1 PERCENT SUPPORT[a] OF STRATEGIES FOR PHARMACISTS

Statement	Disapprove	Neutral	Approve
Required to report double doctoring and drug abuse	11.8	13.6	74.5
Central computer system for recording and linking info about prescribing, dispensing and utilization	17.4	18.4	64.2
Substitution of lower cost interchangeables if "no- sub" order absent	29.4	11.7	58.9
Required to inform patient when using substitute drug	30.2	21.5	48.3
Printed info on use and side effects with each Rx	34.4	21.6	44.0
Fixed annual dispensing fee	81.0	13.7	5.3

[a] The original five point scale was recoded into a three point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve."

TABLE 7.2 PERCENT SUPPPORT[a] OF STRATEGIES FOR PHYSICIANS

Statement	Disapprove	Neutral	Approve
Ads to include side effects, contraindications and costs	5.9	11.2	82.9
License new drugs only if significant improvement over available drugs	22.1	9.8	68.1
Register all benefits over $100 provided by drug companies	19.0	28.7	52.3
Limit products covered by drug benefit plans	36.6	16.6	46.8
Eliminate drug samples	29.2	26.2	44.1
Patent protection limited to two years	67.9	16.9	15.2

[a] The original five-point scale was recoded into a three-point scale: The two disapprove scores were classified as "disapprove" and the two approve scores as "approve."

TABLE 7.3 PERCENT SUPPORT[a] OF STRATEGIES FOR PHYSICIANS

Statement	Disapprove	Neutral	Approve
Accredited continuing education on drugs and prescribing	1.2	12.7	86.0
Professional review of prescribing patterns	7.1	17.1	75.8
Hospital review of prescribing patterns	6.9	21.7	71.4
Require MDs ID on all Rxs	9.0	23.0	68.0
Random audits of MDs practices	9.6	27.8	62.6

[a] The original five-point scale was recoded into a three-point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve".

TABLE 7.4 PERCENT SUPPORT* OF STRATEGIES FOR PATIENTS

Statement	Disapprove	Neutral	Approve
Drug education program for all high school students	3.3	14.2	82.5
"Smart card" for all patients	7.7	11.8	80.5
Limit number of drugs insured by ODB	22.7	14.9	62.4
Eliminate OTC drugs from ODB	29.9	17.5	52.6
Expand ODB to cover all Ontario residents	75.6	13.0	11.4

* The original five-point scale was recoded into a three-point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve".

CHAPTER 8

SUMMARY AND CONCLUSIONS

The Pharmaceutical Inquiry of Ontario, chaired by Dr. Frederick Lowy, was established by the Minister of Health in March, 1988 to undertake an inquiry into all aspects of the government's role and influence in the prescription drug marketplace. Under its terms of reference, the Pharmaceutical Inquiry was given the authority to hold public hearings and to commission research into aspects of drug prescription and utilization. This monograph reports the results of a representative survey of 668 Ontario pharmacists, and documents their experiences with prescription drugs, and their attitudes toward issues and policies related to drug prescribing.

The survey questionnaire explored pharmacists' professional practices, their assessment of the sources and adequacy of information about drugs and drug dispensing available to them, their judgement of factors which might influence the utilization of prescription drugs, and their support of a range of policy strategies to monitor and improve drug prescribing in Ontario. A summary of conclusions drawn from the survey results follows:

1. Most pharmacists practising in Ontario have a baccalaureate degree and almost two-thirds work in community pharmacies. Pharmacists are almost equally split between males and females; however, there is a predominance of males among older pharmacists and a predominance of females among more recent graduates.

2. Almost all community pharmacies have a computerized patient profile system and displays of health related material. However, less than a third have private consulting areas, and only about ten percent have audio-visual material available for the public.

3. Pharmacists spend about half of their time dispensing. Pharmacists licensed before 1970 tend to spend more time dispensing, while those licensed after 1980 spend more time on continuing education and consulting with other professionals. Community pharmacists spend more of their time dispensing, selling non-prescription drugs, counselling patients on drug therapies, and third party plan administration. Hospital pharmacists devote a greater proportion of their time to consulting with other professionals, continuing education, business activities and prescription record keeping.

4. Pharmacists report relatively little contact with either prescribers or pharmaceutical company representatives. The majority place few, if any, restrictions on visits by drug company representatives, and they indicate that they have been offered very few benefits from these representatives. In their written comments, and in a question asking about expanded responsibilities, pharmacists indicate that they would like greater contact with prescribers.

5. Pharmacists, especially pharmacists licensed after 1980, are supportive of new or greater responsibilities in counselling and educating patients, health promotion and lifestyle counselling, and monitoring drug treatments. The majority are not interested in home visits.

6. The majority of pharmacists rate their undergraduate pharmaceutical education as inadequate. In terms of specific skills, pharmacists are particularly dissatisfied with their knowledge of the equivalency of therapeutic substitutions, drug interactions and non-drug alternative therapies. Pharmacists licensed after 1980 express a greater dissatisfaction with their knowledge of drug costs.

7. The most important sources of information for pharmacists are the Compendium of Pharmaceuticals and Specialties, journal articles, and drug information centres. Pharmaceutical company representatives and ads and promotional literature were ranked as least important, but even with these sources, approximately a quarter of the pharmacists claimed they are an important, or very important source of information. Pharmacists licensed after 1980 are more likely to rely on journal articles, drug information centres and consultations with prescribers and pharmacists for their drug information.

8. Numerous factors such as inadequate sources of information, rate of introduction of new drugs, and inability to critically assess information were offered to the pharmacists as possible problems affecting their capacity to keep up their knowledge about prescription drugs. None of these factors was ranked as a serious problem for most of the pharmacists surveyed. The most serious problem, mentioned by about half the sample, was lack of time.

9. The majority of pharmacists agree that dispensary assistants (DAs) should be permitted to receive written prescriptions from patients and hand out prescriptions that require no

further counselling. About two-thirds of pharmacists licensed after 1980 feel DAs should have some community college training, but less than half of those licensed before 1970 share this view. There is also some disagreement on whether DAs should be permitted to provide information to customers on non-prescription drugs. While the majority of all pharmacists oppose this idea, those licensed after 1970 are more likely to do so.

10. Relatively few pharmacists feel that Ontario Drug Benefit (ODB) fees should be lower than for the cash marketplace, that fees for renewals should be lower than for new prescriptions, that ODB fees should be lower for over-the-counter drugs, or that fees should be linked to the cost of the drugs. Pharmacists do feel that hospitals should receive the same fees as retail outlets for dispensing out-patient prescriptions and that the ODB Plan should remunerate pharmacists for home visits.

11. Only about half of the pharmacists agree with the current, mandatory practices of posting "usual and customary" fees for interchangeable drugs, and listing both drug cost and the fee charged on all prescription receipts (including ODB recipients and those with third party coverage).

12. A majority of pharmacists are not supportive of co-payments for ODB coverage calculated as a percent of total prescription costs, annual patient co-payments, or making ODB benefits taxable. The option that receives the most support, although by only slightly over fifty percent of the responding pharmacists, is a nominal fixed co-payment for each prescription filled. There are minor differences in responses to this question by year of licensing, with those licensed after 1980 slightly more approving of the options.

13. Only about half of the pharmacists feel there is a potential conflict of interest in pharmacists accepting benefits from pharmaceutical companies, and this percent is significantly lower for those licensed after 1980. Only about half agree that the Ontario College of Pharmacists should set and enforce guidelines for conflict of interest concerning benefits from pharmaceutical companies.

14. The most commonly perceived reasons cited by the pharmacists as leading to higher overall prescription drug costs are an aging population, the availability of new, more effective drugs, and increasing public enrolment in drug plans. Factors seen as less important include drug company profits, lack of information on non-drug therapies, and bioengineered drugs. Very few respondents feel that pharmacists' dispensing fees are an important factor leading to increasing prescription drug costs.

15. A wide range of strategies for monitoring and controlling prescription drug costs in Ontario were offered to pharmacists for their comments. Overall, pharmacists are most supportive of strategies aimed at the public, prescribers and drug manufacturers. Perhaps not surprisingly, they are least supportive of strategies aimed at pharmacists. Pharmacists are supportive of accredited continuing education courses in drugs and drug prescribing aimed at prescribers, regulations requiring drug companies to include information about contraindications, side-effects and costs in their advertisements, and the introduction of drug education programs for all high school students. They are least supportive of a fixed annual fee covering the dispensing costs of all prescriptions to an individual and the expansion of the ODB Plan to cover all Ontario residents.

APPENDIX A

QUESTIONNAIRE AND COVER LETTERS

PHARMACEUTICAL
INQUIRY OF ONTARIO

Dear Pharmacist:

We need your help. We are asking you to put aside thirty minutes of your time to complete the attached **confidential** questionnaire. Its purpose is to clarify a number of important points relating to the dispensing of drugs in Ontario.

Pharmacists play a pivotal role in the utilization of prescription drugs. The Pharmaceutical Inquiry is examining various aspects of pharmacy practice and the provision of drugs to the public of Ontario, including prescribing, dispensing, costs, utilization, and education. The Inquiry will be making recommendations to the Provincial Government and it is important that the recommendations be based on accurate information.

Professors Rhonda Cockerill (University of Toronto) and Paul Williams (Ryerson Polytechnical Institute) are conducting the study of a sample of Ontario pharmacists on behalf of the Pharmaceutical Inquiry, and with the assistance of the Ontario College of Pharmacists and the Ontario Pharmacists' Association.

We urge you to complete the questionnaire and return it as soon as possible.

Sincerely yours,

Frederick Lowy
Chairman
Pharmaceutical Inquiry
of Ontario

Romeo Franceschini
Executive Director
Ontario Pharmacists'
Association

William Wensley
Registrar
Ontario College of
Pharmacists

University of Toronto
Faculty of Medicine
Department of Health Administration

Health Care Research Unit
M. Marmon Building
12 Queen's Park Crescent West
Toronto, Ontario M5S 1A1
Phone (416) 978-0663

June 1989

Dear Pharmacist.

We are writing to invite your participation in a survey which asks pharmacists across Ontario for their views on a number of important issues concerning prescription drugs. We believe that it is vital to understand the experiences and opinions of practitioners like yourself before considering possible strategies for monitoring and improving drug prescribing.

This survey is being conducted as part of the Pharmaceutical Inquiry of Ontario which will make recommendations to government about policies relating to prescription drugs. The enclosed questionnaire was designed in consultation with pharmacists in a variety of practice settings. and we believe that even a quick glance will demonstrate its relevance to your professional concerns. The survey is endorsed by the Ontario College of Pharmacists and the Ontario Pharmacists Association.

We wish to stress that the responses of individual pharmacists will be kept **strictly confidential**. The number on your questionnaire is for administrative purposes only. to allow us to properly target our followup efforts. Once we receive your questionnaire. the number will be removed.

May we ask you to take the time to complete and return the enclosed questionnaire? Your response will ensure that the views of Ontario pharmacists are taken into account when considering policies about prescription drugs.

Yours sincerely,

Rhonda Cockerill

Rhonda Cockerill, PhD.
Professor

P. Williams

A. Paul Williams. PhD.
Professor

Pharmaceutical Inquiry of Ontario

1989 Survey of Pharmacists

All responses will be kept **strictly confidential**.

This questionnaire should be completed by the pharmacist **personally**. Pharmacists in all work settings are included in this survey.

A. Information Sources and Needs

The first section of the survey is concerned with your educational preparation and access to information about drugs and drug dispensing.

Because the survey aims to gather responses from pharmacists in a range of professional settings including hospitals, all questions may not apply to your practice. Please indicate this by writing ***NA*** *in the margin where appropriate.*

1. How would you rate your undergraduate pharmacy training as preparation for your present work as a pharmacist? (Please circle the appropriate number on the right.)

very inadequate	1
somewhat inadequate	2
neutral	3
somewhat adequate	4
very adequate	5

2. How satisfied or dissatisfied are you with your own current level of knowledge in each of the following areas concerning prescription drugs. (Please enter the appropriate number on the line to the right.)

very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
1	2	3	4	5

a. drug effectiveness ____
b. equivalencies of interchangeable brands of drugs ____
c. equivalencies of therapeutic substitutions ____
d. drug costs ____
e. the needs of special groups like children and the elderly ____
f. abuse of prescription drugs ____
g. drug interactions ____
h. non-drug alternative therapies ____
i. adverse drug effects ____

3. Pharmacists may obtain professionally-related information from a variety of sources. How important is each of the following as a source of information for you in your work?

not important		somewhat important		very important
1	2	3	4	5

a. meetings, conferences, seminars ____
b. continuing education courses ____
c. audiocassettes, videos or movies ____
d. advertisements, promotional literature ____
e. consultations with pharmacists, prescribers ____
f. pharmaceutical company representatives ____
g. journal articles ____
h. OCP prescribed library ____
i. drug information centres ____
j. Compendium of Pharmaceuticals & Specialties ____
k. other (please specify) ____

4. In your experience, how serious are each of the following as problems affecting your capacity to *keep up* your professional knowledge about prescription drugs?

not a problem		somewhat of a problem		a serious problem
1	2	3	4	5

a. introduction of new drugs ____
b. lack of time ____
c. inadequate sources of information ____
d. distrust of available information ____
e. introduction of interchangeable brands of drugs ____
f. inability to critically assess information ____
g. other (please specify) ____

B. Professional Practice

This section of the questionnaire asks about your work as a pharmacist. If some questions do not apply to your work, please indicate this by writing ***NA*** *beside them and then going on to answer the questions that do apply.*

1. In a typical week, about how many hours do you work in your job as a pharmacist?

hours per week ____

2. About how many prescriptions do you *personally* dispense during a typical working week?

number of prescriptions _ _ _

3. About what percentage of these prescriptions do you dispense using interchangeable brands of a drug?

interchangeable brands _ _ %

4. During a typical working week, about what percentage of your time do you spend in each of the following activities?

a dispensing (including supervising and checking) _ _%
b selling non-prescription drugs _ _%
c counselling patients on drug therapy _ _%
d consulting with other health professionals _ _%
e continuing education *keeping up* _ _%
f third party plan administration _ _%
g business activities (accounting, merchandising, inventory, personnel) _ _%
h prescription record keeping _ _%
i other (please specify) _ _%

_ _%

total 100%

5. On how many separate occasions during a typical working week will you

	number of occasions
a contact a prescriber about a specific prescription they've ordered	_ _ _
b be contacted by a prescriber about a specific prescription they've ordered	_ _ _
c make a specific therapeutic recommendation to a prescriber	_ _ _
d make a specific non-prescription recommendation to a patient	_ _ _
e provide general counselling to a prescriber on drug therapy	_ _ _
f provide general counselling to a patient on drug therapy	_ _ _
g be contacted by a pharmaceutical company representative	_ _ _

6. In the pharmacy in which you primarily work, are there any restrictions on visits by pharmaceutical company representatives?

no restrictions 1
no visits permitted 2
some restrictions (please specify) 3

_____

7. In the past year, on how many separate occasions have you been offered the following benefits by pharmaceutical company representatives?

	number of occasions
a. drug samples	_ _ _
b. meals	_ _ _
c. conference fees	_ _ _
d. free goods or rebates	_ _ _
e. travel expenses	_ _ _
f. gifts or bonuses	_ _ _
g. computer hardware or software	_ _ _
h. other (please specify)	_ _ _

_____

8. Some pharmacists argue that their role should change. Would you approve or disapprove of new or greater responsibilities for each of the following?

	strongly disapprove 1	**disapprove** 2	**neutral** 3	**approve** 4	**strongly approve** 5
a therapeutic decision-making					
b counselling and educating patients about drugs					
c counselling and educating prescribers about drugs					
d counselling patients and prescribers about non-drug alternative therapies					
e monitoring drug treatments					
f home visits					
g health promotion and lifestyle counselling					
h other (please specify)					

_____

9. Concerning the role of dispensary assistants in the pharmacy, how strongly do you agree or disagree with each of the following statements?

strongly disagree 1	disagree 2	neutral 3	agree 4	strongly agree 5

a. dispensary assistants should at a minimum have community college training ___
b. dispensary assistants should be permitted to receive written prescriptions from patients ___
c. dispensary assistants should be permitted to hand out to patients prescriptions which require no further counselling ___
d. dispensary assistants should be required to wear tags identifying their status ___
e. dispensary assistants should be permitted to provide information to customers about non-prescription drugs ___

10. In the space below, please indicate what you feel should be the maximum number of dispensary assistants per pharmacist on any regular daytime shift

maximum number of assistants __

C. Professional Issues

This section asks for your views on issues concerning professional fees, drug costs, and strategies for monitoring and controlling prescription drugs.

1. Using the response options below, please indicate your position on each of the following statements concerning professional fees

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

a. Ontario Drug Benefit fees should be lower than for the cash marketplace ___
b. fees for renewals should be lower than for new prescriptions ___
c. fees should be linked to the costs of drugs ___
d. Ontario Drug Benefit fees should be lower for over-the-counter drugs ___
e. hospitals should receive the same fees as retail outlets for dispensing out-patient prescriptions ___
f. the Ontario Drug Benefit Plan should remunerate pharmacists for home visits ___

2. How strongly do you approve or disapprove of each of the following aspects of *current practice* regarding professional fees?

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

a. mandatory posting of *usual and customary* fees for interchangeable drugs ___
b. mandatory listing on each prescription receipt of the drug cost and fee charged ___
c. mandatory listing on each prescription receipt to ODB recipients of the drug cost and fee charged ___
d. mandatory listing on each prescription receipt to customers with third party coverage of the drug cost and fee charged ___

3. There have been reports that once older patients receive Ontario Drug Benefits, there is also an increase in the number of prescriptions they receive. In your experience, does this happen

almost never	1
infrequently	2
some of the time	3
frequently	4
almost always	5

4. How would you rate each of the following as factors leading to increasing overall prescription drug costs in Ontario over the past ten years?

not important 1	2	somewhat important 3	4	very important 5

a. an aging population ___
b. availability of new, more effective drugs ___
c. drug company profits ___
d. too little emphasis on preventive care ___
e. increasing public enrolment in drug plans ___
f. pharmacists' dispensing fees ___
g. bioengineered drugs ___
h. lack of information about non-drug therapies ___
i. lack of personal responsibility for health ___
j. other (please specify) ___

_____

5. About what percentage of the prescriptions you dispense do you feel **are not** strictly medically necessary?

_ _%

6. Of the drugs you are familiar with, about what percentage would you say **do not** produce results commensurate with their costs?

_ _%

7. How strongly do you agree or disagree with each of the following statements concerning patient co-payments for Ontario Drug Benefit Plan coverage?

strongly disagree 1	disagree 2	neutral 3	agree 4	strongly agree 5

a. establishment of an annual patient co-payment (e.g. $50) ____
b. establishment of a nominal fixed co-payment for each prescription filled (e.g. $5) ____
c. establishment of co-payments as a percentage of total prescription costs (e.g. 5%) ____
d. regulations making ODB benefits taxable ____

8. Would you agree or disagree that there is a potential conflict of interest in pharmacists accepting benefits from pharmaceutical companies?

strongly disagree 1
disagree 2
neutral 3
agree 4
strongly agree 5

9. Would you agree or disagree that the Ontario College of Pharmacists should set and enforce guidelines for conflict of interest concerning benefits from pharmaceutical companies?

strongly disagree 1
disagree 2
neutral 3
agree 4
strongly agree 5

10. Listed below are a number of *current or future strategies* for monitoring and controlling prescription drugs in Ontario. Using the response options, please indicate your position on each.

Strategies for Pharmacists

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

a. regulations requiring substitution of lower cost *interchangeable* products in the absence of a *no sub* order by the physician ____
b. a central computerized system for recording and linking information about prescribing, dispensing and utilization ____
c. regulations requiring pharmacists to provide printed information on appropriate use and possible side-effects with each prescription ____
d. a fixed annual fee covering the dispensing costs of all prescriptions to an individual ____
e. regulations requiring pharmacists to report all suspected cases of *double doctoring* or prescription drug abuse to the physician ____
f. regulations requiring pharmacists to notify patients when a drug substitution has occurred ____

Strategies for Drug Manufacturers

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

g. government licencing of new drugs only if they demonstrate significant improvements over available drugs ____
h. public registration of all benefits over $100 provided by drug companies to physicians, pharmacists or government officials ____
i. regulations requiring drug companies to include information about contraindications, side-effects and costs in their advertisements ____
j. legislation to limit to two years drug manufacturers' patent protection ____

k. coverage of only a limited number of products in each category under drug benefit plans ___

l. elimination of promotional drug sampling to prescribers ___

Strategies for Physicians

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

m. introduction of a professional review system to examine prescribing patterns which vary significantly from the norm ___

n. hospital committees to monitor and review the prescribing practices of physicians with admitting privileges ___

o. accredited continuing education courses in drugs and drug prescribing ___

p. random audits of physicians' practices linking clinical diagnosis with drug, dosage and duration of therapy ___

q. mandatory recording of a physician's ID on prescriptions to facilitate audit and review ___

Strategies for Patients

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

r. expansion of the Ontario Drug Benefit Plan to cover all Ontario residents ___

s. introduction of a computerized *smart card* containing the patient's medical history and drug use which can be read by doctors and pharmacists ___

t. limiting the number of drugs insured under the Ontario Drug Benefit Plan ___

u. elimination of Ontario Drug Benefit Plan coverage of over-the-counter drugs ___

v. introduction of drug education programs for all high school students ___

11. Are there other strategies for monitoring and improving drug prescribing which you support? (Please specify)

_____

_____

_____

D. Practice Characteristics

This final section asks about the pharmacy in which you spend most of your time.

1. In what type of pharmacy do you mainly work?

community pharmacy 1
hospital pharmacy 2
industry 3
government 4
academia 5
other (please specify) 6

_____

2. How many pharmacists and dispensary assistants are employed full-time and part-time in the pharmacy where you mainly work? (Full-time is defined as 35 or more hours per week.)

Pharmacists
a. full-time ___
b. part-time ___
Dispensary Assistants
c. full-time ___
d. part-time ___

3. If you are mainly employed in a hospital pharmacy what is the size of the facility?

not employed in a hospital facility 0
under 50 beds 1
50 - 250 beds 2
250 - 500 beds 3
over 500 beds 4

If you work mainly in government, industry, academia or a hospital pharmacy, please skip to Q 10.

4. Which of the following best describes your position in the pharmacy where you mainly work?

owner	1
franchisee	2
shareholder	3
non-owner manager	4
staff pharmacist	5

5. Is your pharmacy part of a chain, a franchise or is it independent?

chain	1
franchise	2
independent	3

6. Which of the following best characterizes your pharmacy's location?

warehouse, emphasis on merchandising	1
part of a larger department store	2
plaza type with front shop and dispensary	3
community (not a large plaza)	4
medical building(little or no front shop)	5

7. Approximately how many prescriptions (new and refills) are dispensed in your pharmacy in a typical working week?

prescriptions per week _ _ _ _

8. Approximately what percentage of these prescriptions are paid for by the Ontario Drug Benefit Plan?

ODB _ _%

9. Does your pharmacy have the following? (Please circle a response for each item.)

	no	yes
a. a manual patient profile system	1	2
b. a computerized patient profile system	1	2
c. a private consultation area	1	2
d. displays of health-related information	1	2
e. public audio-visual information	1	2

10. Which one of the following best describes your registration with the Ontario College of Pharmacists?

Owner (Section I of Register)	1
Manager (Section I of Register)	2
Employee (Section II of Register)	3

11. Where did you complete your undergraduate pharmacy training?

Ontario	1
elsewhere in Canada	2
United States	3
United Kingdom	4
Europe	5
other (please specify)	6

_ _

12. Which of the following pharmacy degrees do you hold? (Please circle all that apply.)

B.Sc. Phm.	1
Phm. B.	2
Master of Pharmacy	3
Pharm. D.	4

13. In what year did you first obtain your license to practice pharmacy in Ontario?

19 _ _

14. Are you

female	1
male	2

15. In what year were you born?

19 _ _

We are very interested in any further comments you may wish to make.
Your contribution to this project is extremely important.

Thank you very much for taking the time to fill out this questionnaire.
Please return it in the stamped, self-addressed envelope provided.

APPENDIX B

FREQUENCY DISTRIBUTIONS

A1 TRAINING ADEQUATE?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Adequate	1	196	29.3	29.7	29.7
Neutral	2	75	11.2	11.4	41.1
Inadequate	3	389	58.2	58.9	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.292 Std Dev .896 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

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A2A Drug Effectiveness

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	80	12.0	12.1	12.1
Neutral	2	121	18.1	18.4	30.5
Satisfied	3	458	68.6	69.5	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.574 Std Dev .699 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

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A2B Brand Equivalencies

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	132	19.8	19.9	19.9
Neutral	2	145	21.7	21.9	41.8
Satisfied	3	385	57.6	58.2	100.0
	.	6	.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.382 Std Dev .797 Minimum 1.000
Maximum 3.000

Valid Cases 662 Missing Cases 6

A2C Therapeutic Equivalencies

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	149	22.3	22.6	22.6
Neutral	2	201	30.1	30.5	53.0
Satisfied	3	310	46.4	47.0	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.244 Std Dev .798 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

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A2D Drug Costs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	126	18.9	19.3	19.3
Neutral	2	161	24.1	24.7	44.0
Satisfied	3	366	54.8	56.0	100.0
	.	15	2.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.368 Std Dev .787 Minimum 1.000
Maximum 3.000

Valid Cases 653 Missing Cases 15

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A2E Special Group Needs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	102	15.3	15.6	15.6
Neutral	2	218	32.6	33.3	48.9
Satisfied	3	334	50.0	51.1	100.0
	.	14	2.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.355 Std Dev .736 Minimum 1.000
Maximum 3.000

Valid Cases 654 Missing Cases 14

A2F Rx Drug Abuse

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	110	16.5	16.7	16.7
Neutral	2	178	26.6	27.0	43.7
Satisfied	3	371	55.5	56.3	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.396 Std Dev .758 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

A2G Drug Interactions

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	165	24.7	24.9	24.9
Neutral	2	191	28.6	28.8	53.7
Satisfied	3	307	46.0	46.3	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.214 Std Dev .817 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

A2H Non-Drug Alternatives

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	206	30.8	31.2	31.2
Neutral	2	248	37.1	37.5	68.7
Satisfied	3	207	31.0	31.3	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.002 Std Dev .791 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

A2I Adverse Drug Effects

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Dissatisfied	1	132	19.8	20.0	20.0
Neutral	2	183	27.4	27.7	47.7
Satisfied	3	346	51.8	52.3	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.324 Std Dev .787 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

A3A Meeting, Conferences, ...

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	125	18.7	19.0	19.0
Somewhat Important	2	195	29.2	29.6	48.6
Very Important	3	339	50.7	51.4	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.325 Std Dev .774 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

A3B Cont'g Education

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	67	10.0	10.1	10.1
Somewhat Important	2	143	21.4	21.6	31.7
Very Important	3	453	67.8	68.3	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.582 Std Dev .668 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

A3C Audio, Video,...

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	229	34.3	35.0	35.0
Somewhat Important	2	234	35.0	35.8	70.8
Very Important	3	191	28.6	29.2	100.0
	.	14	2.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.942 Std Dev .800 Minimum 1.000
Maximum 3.000

Valid Cases 654 Missing Cases 14

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A3D Ads, promos

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	305	45.7	46.0	46.0
Somewhat Important	2	244	36.5	36.8	82.8
Very Important	3	114	17.1	17.2	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.712 Std Dev .741 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

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A3E Other pharmacists, prescribers

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	122	18.3	18.5	18.5
Somewhat Important	2	199	29.8	30.1	48.6
Very Important	3	340	50.9	51.4	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.330 Std Dev .769 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

A3F Pharm Company Reps

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	229	34.3	34.8	34.8
Somewhat Important	2	264	39.5	40.1	74.9
Very Important	3	165	24.7	25.1	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.903 Std Dev .768 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

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A3G Journals

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	23	3.4	3.4	3.4
Somewhat Important	2	104	15.6	15.6	19.0
Very Important	3	540	80.8	81.0	100.0
	.	1	.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.775 Std Dev .494 Minimum 1.000
Maximum 3.000

Valid Cases 667 Missing Cases 1

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A3H OCP Prescribed Library

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	170	25.4	26.4	26.4
Somewhat Important	2	190	28.4	29.5	56.0
Very Important	3	283	42.4	44.0	100.0
	.	25	3.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.176 Std Dev .821 Minimum 1.000
Maximum 3.000

Valid Cases 643 Missing Cases 25

A3I Drug Info Centres

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	63	9.4	9.5	9.5
Somewhat Important	2	88	13.2	13.3	22.8
Very Important	3	511	76.5	77.2	100.0
	.	6	.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.677 Std Dev .640 Minimum 1.000
Maximum 3.000

Valid Cases 662 Missing Cases 6

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A3J CPS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	23	3.4	3.5	3.5
Somewhat Important	2	105	15.7	15.8	19.2
Very Important	3	538	80.5	80.8	100.0
	.	2	.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.773 Std Dev .495 Minimum 1.000
Maximum 3.000

Valid Cases 666 Missing Cases 2

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A3K Other

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	7	1.0	7.5	7.5
Somewhat Important	2	9	1.3	9.7	17.2
Very Important	3	77	11.5	82.8	100.0
	.	575	86.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.753 Std Dev .583 Minimum 1.000
Maximum 3.000

Valid Cases 93 Missing Cases 575

A4A New Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	298	44.6	45.3	45.3
Somewhat of a Proble	2	258	38.6	39.2	84.5
A Serious Problem	3	102	15.3	15.5	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.702 Std Dev .721 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

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A4B Lack of Time

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	115	17.2	17.4	17.4
Somewhat of a Proble	2	197	29.5	29.8	47.2
A Serious Problem	3	349	52.2	52.8	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.354 Std Dev .760 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

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A4C Poor Info Sources

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	324	48.5	49.1	49.1
Somewhat of a Proble	2	217	32.5	32.9	82.0
A Serious Problem	3	119	17.8	18.0	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.689 Std Dev .759 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

A4D Distrust Available Info

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	425	63.6	64.4	64.4
Somewhat of a Proble	2	177	26.5	26.8	91.2
A Serious Problem	3	58	8.7	8.8	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.444 Std Dev .651 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

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A4E Interchangeable Brands

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	396	59.3	60.5	60.5
Somewhat of a Proble	2	185	27.7	28.2	88.7
A Serious Problem	3	74	11.1	11.3	100.0
	.	13	1.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.508 Std Dev .690 Minimum 1.000
Maximum 3.000

Valid Cases 655 Missing Cases 13

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A4F Can't critically assess info

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	327	49.0	49.7	49.7
Somewhat of a Proble	2	212	31.7	32.2	81.9
A Serious Problem	3	119	17.8	18.1	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.684 Std Dev .761 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

A4G Other

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not a Problem	1	6	.9	23.1	23.1
Somewhat of a Proble	2	3	.4	11.5	34.6
A Serious Problem	3	17	2.5	65.4	100.0
	.	642	96.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.423 Std Dev .857 Minimum 1.000
Maximum 3.000

Valid Cases 26 Missing Cases 642

B1 Hrs Worked per Week

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	3	.4	.5	.5
	1	1	.1	.2	.6
	2	2	.3	.3	1.0
	4	1	.1	.2	1.1
	5	3	.4	.5	1.6
	6	1	.1	.2	1.7
	7	1	.1	.2	1.9
	8	3	.4	.5	2.4
	9	4	.6	.6	3.0
	10	15	2.2	2.4	5.4
	12	9	1.3	1.4	6.8
	13	2	.3	.3	7.1
	14	1	.1	.2	7.3
	15	22	3.3	3.5	10.8
	16	8	1.2	1.3	12.0
	17	1	.1	.2	12.2
	18	9	1.3	1.4	13.6
	19	3	.4	.5	14.1
	20	31	4.6	4.9	19.0
	21	2	.3	.3	19.3
	22	10	1.5	1.6	20.9
	23	3	.4	.5	21.4
	24	18	2.7	2.9	24.2
	25	16	2.4	2.5	26.8
	26	2	.3	.3	27.1
	27	3	.4	.5	27.6
	28	5	.7	.8	28.4
	29	1	.1	.2	28.5
	30	16	2.4	2.5	31.1
	32	9	1.3	1.4	32.5
	33	2	.3	.3	32.8
	35	37	5.5	5.9	38.7
	36	15	2.2	2.4	41.0
	37	80	12.0	12.7	53.7
	38	43	6.4	6.8	60.5
	39	7	1.0	1.1	61.6
	40	121	18.1	19.2	80.8
	41	4	.6	.6	81.5
	42	6	.9	1.0	82.4
	43	2	.3	.3	82.7
	44	1	.1	.2	82.9
	45	31	4.6	4.9	87.8
	46	3	.4	.5	88.3
	48	5	.7	.8	89.1
	49	1	.1	.2	89.2
	50	29	4.3	4.6	93.8
	51	2	.3	.3	94.1
	52	4	.6	.6	94.8
	53	1	.1	.2	94.9
	54	1	.1	.2	95.1
	55	13	1.9	2.1	97.1
	56	1	.1	.2	97.3
	57	1	.1	.2	97.5

B1 Hrs Worked per Week

58	1	.1	.2	97.6
60	12	1.8	1.9	99.5
64	1	.1	.2	99.7
65	1	.1	.2	99.8
78	1	.1	.2	100.0
.	37	5.5	MISSING	
TOTAL	668	100.0	100.0	

Mean	34.228	Std Dev	12.457	Minimum	.000
Maximum	78.000				

Valid Cases 631 Missing Cases 37

B2 No. Rx Dispensed

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	5	.7	1.0	1.0
	1	1	.1	.2	1.2
	2	1	.1	.2	1.4
	3	1	.1	.2	1.6
	10	5	.7	1.0	2.5
	15	1	.1	.2	2.7
	20	3	.4	.6	3.3
	25	1	.1	.2	3.5
	30	8	1.2	1.6	5.1
	35	1	.1	.2	5.3
	40	3	.4	.6	5.8
	45	1	.1	.2	6.0
	50	16	2.4	3.1	9.1
	60	5	.7	1.0	10.1
	70	2	.3	.4	10.5
	75	6	.9	1.2	11.7
	80	8	1.2	1.6	13.2
	85	1	.1	.2	13.4
	90	4	.6	.8	14.2
	100	31	4.6	6.0	20.2
	110	2	.3	.4	20.6
	115	1	.1	.2	20.8
	120	4	.6	.8	21.6
	125	4	.6	.8	22.4
	130	1	.1	.2	22.6
	150	27	4.0	5.3	27.8
	160	4	.6	.8	28.6
	175	3	.4	.6	29.2
	180	4	.6	.8	30.0
	200	43	6.4	8.4	38.3
	220	3	.4	.6	38.9
	230	2	.3	.4	39.3
	232	1	.1	.2	39.5
	250	33	4.9	6.4	45.9
	260	1	.1	.2	46.1
	275	3	.4	.6	46.7
	280	2	.3	.4	47.1
	290	1	.1	.2	47.3
	300	43	6.4	8.4	55.6
	325	3	.4	.6	56.2
	330	1	.1	.2	56.4
	340	1	.1	.2	56.6
	350	20	3.0	3.9	60.5
	370	1	.1	.2	60.7
	375	2	.3	.4	61.1
	380	3	.4	.6	61.7
	385	1	.1	.2	61.9
	400	45	6.7	8.8	70.6
	410	1	.1	.2	70.8
	450	10	1.5	1.9	72.8
	480	1	.1	.2	73.0
	493	1	.1	.2	73.2
	500	44	6.6	8.6	81.7

B2 No. Rx Dispensed

506	1	.1	.2	81.9
525	2	.3	.4	82.3
540	1	.1	.2	82.5
550	4	.6	.8	83.3
575	1	.1	.2	83.5
600	25	3.7	4.9	88.3
608	1	.1	.2	88.5
650	3	.4	.6	89.1
700	12	1.8	2.3	91.4
750	9	1.3	1.8	93.2
757	1	.1	.2	93.4
800	13	1.9	2.5	95.9
805	1	.1	.2	96.1
808	1	.1	.2	96.3
834	1	.1	.2	96.5
850	2	.3	.4	96.9
900	7	1.0	1.4	98.2
999	9	1.3	1.8	100.0
.	154	23.1	MISSING	
TOTAL	668	100.0	100.0	

Mean	335.088	Std Dev	235.570	Minimum	.000
Maximum	999.000				

Valid Cases 514 Missing Cases 154

B3 Percent Interchangeable

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	1	.1	.2	.2
	2	1	.1	.2	.4
	3	1	.1	.2	.6
	4	1	.1	.2	.8
	5	1	.1	.2	1.0
	7	2	.3	.4	1.4
	10	1	.1	.2	1.6
	15	2	.3	.4	2.0
	20	10	1.5	2.0	3.9
	25	9	1.3	1.8	5.7
	30	22	3.3	4.3	10.0
	35	7	1.0	1.4	11.4
	40	40	6.0	7.8	19.2
	45	6	.9	1.2	20.4
	50	87	13.0	17.1	37.5
	52	1	.1	.2	37.6
	55	2	.3	.4	38.0
	56	1	.1	.2	38.2
	60	74	11.1	14.5	52.7
	65	14	2.1	2.7	55.5
	66	2	.3	.4	55.9
	68	1	.1	.2	56.1
	70	43	6.4	8.4	64.5
	75	59	8.8	11.6	76.1
	78	1	.1	.2	76.3
	79	1	.1	.2	76.5
	80	61	9.1	12.0	88.4
	85	10	1.5	2.0	90.4
	90	36	5.4	7.1	97.5
	95	7	1.0	1.4	98.8
	99	6	.9	1.2	100.0
	.	158	23.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 61.190 Std Dev 20.054 Minimum .000
Maximum 99.000

Valid Cases 510 Missing Cases 158

B4A Dispensing

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	7	1.0	1.2	1.2
	1	3	.4	.5	1.7
	2	2	.3	.3	2.0
	3	1	.1	.2	2.2
	5	11	1.6	1.9	4.0
	7	1	.1	.2	4.2
	10	17	2.5	2.9	7.1
	12	2	.3	.3	7.4
	15	10	1.5	1.7	9.1
	17	1	.1	.2	9.3
	18	1	.1	.2	9.4
	20	26	3.9	4.4	13.8
	22	1	.1	.2	14.0
	25	17	2.5	2.9	16.9
	28	1	.1	.2	17.0
	30	27	4.0	4.6	21.6
	33	1	.1	.2	21.8
	35	12	1.8	2.0	23.8
	37	3	.4	.5	24.3
	40	56	8.4	9.4	33.7
	41	2	.3	.3	34.1
	43	2	.3	.3	34.4
	44	1	.1	.2	34.6
	45	6	.9	1.0	35.6
	47	1	.1	.2	35.8
	48	2	.3	.3	36.1
	49	2	.3	.3	36.4
	50	94	14.1	15.9	52.3
	51	3	.4	.5	52.8
	53	1	.1	.2	53.0
	54	1	.1	.2	53.1
	55	9	1.3	1.5	54.6
	56	2	.3	.3	55.0
	57	2	.3	.3	55.3
	58	3	.4	.5	55.8
	60	83	12.4	14.0	69.8
	62	2	.3	.3	70.2
	64	2	.3	.3	70.5
	65	24	3.6	4.0	74.5
	66	2	.3	.3	74.9
	67	1	.1	.2	75.0
	68	1	.1	.2	75.2
	69	4	.6	.7	75.9
	70	40	6.0	6.7	82.6
	71	1	.1	.2	82.8
	73	1	.1	.2	83.0
	75	30	4.5	5.1	88.0
	77	2	.3	.3	88.4
	78	2	.3	.3	88.7
	80	31	4.6	5.2	93.9
	82	1	.1	.2	94.1
	83	3	.4	.5	94.6
	84	1	.1	.2	94.8

B4A Dispensing

85	7	1.0	1.2	96.0
87	1	.1	.2	96.1
88	3	.4	.5	96.6
89	2	.3	.3	97.0
90	12	1.8	2.0	99.0
95	3	.4	.5	99.5
99	3	.4	.5	100.0
.	75	11.2	MISSING	
TOTAL	668	100.0	100.0	

Mean 50.857 Std Dev 22.314 Minimum .000
Maximum 99.000

Valid Cases 593 Missing Cases 75

B4B Non-Rx Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	48	7.2	10.6	10.6
	1	13	1.9	2.9	13.5
	2	19	2.8	4.2	17.7
	3	5	.7	1.1	18.8
	4	7	1.0	1.5	20.3
	5	93	13.9	20.5	40.8
	6	2	.3	.4	41.3
	7	4	.6	.9	42.2
	8	8	1.2	1.8	43.9
	9	2	.3	.4	44.4
	10	137	20.5	30.2	74.6
	12	2	.3	.4	75.1
	13	2	.3	.4	75.5
	14	1	.1	.2	75.7
	15	41	6.1	9.1	84.8
	18	1	.1	.2	85.0
	19	2	.3	.4	85.4
	20	42	6.3	9.3	94.7
	21	2	.3	.4	95.1
	25	9	1.3	2.0	97.1
	26	1	.1	.2	97.4
	30	6	.9	1.3	98.7
	35	4	.6	.9	99.6
	40	1	.1	.2	99.8
	50	1	.1	.2	100.0
	.	215	32.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 9.556 Std Dev 7.484 Minimum .000
Maximum 50.000

Valid Cases 453 Missing Cases 215

B4C Counselling Patients

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	22	3.3	4.1	4.1
	1	17	2.5	3.1	7.2
	2	19	2.8	3.5	10.7
	3	9	1.3	1.7	12.3
	4	11	1.6	2.0	14.4
	5	122	18.3	22.5	36.8
	6	7	1.0	1.3	38.1
	7	3	.4	.6	38.7
	8	6	.9	1.1	39.8
	9	4	.6	.7	40.5
	10	174	26.0	32.0	72.6
	11	1	.1	.2	72.7
	12	2	.3	.4	73.1
	13	1	.1	.2	73.3
	14	1	.1	.2	73.5
	15	46	6.9	8.5	82.0
	18	3	.4	.6	82.5
	20	52	7.8	9.6	92.1
	22	2	.3	.4	92.4
	23	1	.1	.2	92.6
	25	12	1.8	2.2	94.8
	26	1	.1	.2	95.0
	30	13	1.9	2.4	97.4
	35	3	.4	.6	98.0
	37	1	.1	.2	98.2
	40	4	.6	.7	98.9
	45	1	.1	.2	99.1
	50	1	.1	.2	99.3
	70	1	.1	.2	99.4
	75	1	.1	.2	99.6
	80	1	.1	.2	99.8
	85	1	.1	.2	100.0
	.	125	18.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 10.974 Std Dev 9.691 Minimum .000
Maximum 85.000

Valid Cases 543 Missing Cases 125

B4D Consulting Hlth Profs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	26	3.9	4.7	4.7
	1	69	10.3	12.5	17.2
	2	63	9.4	11.4	28.6
	3	19	2.8	3.4	32.1
	4	11	1.6	2.0	34.1
	5	152	22.8	27.5	61.6
	6	2	.3	.4	62.0
	8	1	.1	.2	62.1
	9	1	.1	.2	62.3
	10	83	12.4	15.0	77.4
	12	1	.1	.2	77.5
	15	15	2.2	2.7	80.3
	20	62	9.3	11.2	91.5
	25	14	2.1	2.5	94.0
	30	12	1.8	2.2	96.2
	35	3	.4	.5	96.7
	39	1	.1	.2	96.9
	40	6	.9	1.1	98.0
	50	4	.6	.7	98.7
	60	4	.6	.7	99.5
	70	1	.1	.2	99.6
	80	2	.3	.4	100.0
	.	116	17.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 9.341 Std Dev 11.238 Minimum .000
Maximum 80.000

Valid Cases 552 Missing Cases 116

B4E Cont'g Ed

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	27	4.0	4.8	4.8
	1	50	7.5	8.9	13.8
	2	55	8.2	9.8	23.6
	3	25	3.7	4.5	28.1
	4	8	1.2	1.4	29.5
	5	201	30.1	36.0	65.5
	6	4	.6	.7	66.2
	7	2	.3	.4	66.5
	8	4	.6	.7	67.3
	10	131	19.6	23.4	90.7
	11	1	.1	.2	90.9
	12	2	.3	.4	91.2
	15	17	2.5	3.0	94.3
	16	1	.1	.2	94.5
	18	1	.1	.2	94.6
	20	17	2.5	3.0	97.7
	25	6	.9	1.1	98.7
	30	5	.7	.9	99.6
	50	1	.1	.2	99.8
	51	1	.1	.2	100.0
	.	109	16.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean	6.649	Std Dev	5.911	Minimum	.000
Maximum	51.000				

Valid Cases 559 Missing Cases 109

B4F Third Party Plan Admin

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	104	15.6	30.1	30.1
	1	41	6.1	11.8	41.9
	2	43	6.4	12.4	54.3
	3	13	1.9	3.8	58.1
	4	7	1.0	2.0	60.1
	5	78	11.7	22.5	82.7
	6	1	.1	.3	82.9
	8	3	.4	.9	83.8
	10	39	5.8	11.3	95.1
	11	1	.1	.3	95.4
	12	1	.1	.3	95.7
	15	4	.6	1.2	96.8
	17	1	.1	.3	97.1
	18	1	.1	.3	97.4
	20	4	.6	1.2	98.6
	25	1	.1	.3	98.8
	30	2	.3	.6	99.4
	70	1	.1	.3	99.7
	90	1	.1	.3	100.0
	.	322	48.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean	4.182	Std Dev	7.474	Minimum	.000
Maximum	90.000				

Valid Cases 346 Missing Cases 322

B4G Business Activities

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	72	10.8	15.5	15.5
	1	17	2.5	3.7	19.1
	2	28	4.2	6.0	25.2
	3	12	1.8	2.6	27.7
	4	11	1.6	2.4	30.1
	5	83	12.4	17.8	48.0
	6	2	.3	.4	48.4
	7	2	.3	.4	48.8
	8	5	.7	1.1	49.9
	10	99	14.8	21.3	71.2
	12	2	.3	.4	71.6
	14	2	.3	.4	72.0
	15	16	2.4	3.4	75.5
	16	2	.3	.4	75.9
	17	3	.4	.6	76.6
	18	3	.4	.6	77.2
	20	29	4.3	6.2	83.4
	21	1	.1	.2	83.7
	23	2	.3	.4	84.1
	25	11	1.6	2.4	86.5
	27	1	.1	.2	86.7
	30	17	2.5	3.7	90.3
	35	4	.6	.9	91.2
	40	11	1.6	2.4	93.5
	45	1	.1	.2	93.8
	50	13	1.9	2.8	96.6
	60	7	1.0	1.5	98.1
	65	2	.3	.4	98.5
	70	3	.4	.6	99.1
	75	2	.3	.4	99.6
	81	1	.1	.2	99.8
	90	1	.1	.2	100.0
	.	203	30.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 12.619 Std Dev 15.588 Minimum .000
Maximum 90.000

Valid Cases 465 Missing Cases 203

B4H Rx Records

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	73	10.9	19.9	19.9
	1	70	10.5	19.1	39.0
	2	41	6.1	11.2	50.1
	3	13	1.9	3.5	53.7
	4	7	1.0	1.9	55.6
	5	111	16.6	30.2	85.8
	6	1	.1	.3	86.1
	7	1	.1	.3	86.4
	10	31	4.6	8.4	94.8
	12	1	.1	.3	95.1
	13	2	.3	.5	95.6
	15	7	1.0	1.9	97.5
	20	6	.9	1.6	99.2
	30	2	.3	.5	99.7
	35	1	.1	.3	100.0
	.	301	45.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 3.965 Std Dev 4.715 Minimum .000
Maximum 35.000

Valid Cases 367 Missing Cases 301

841 Other

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	13	1.9	6.5	6.5
	1	4	.6	2.0	8.5
	2	6	.9	3.0	11.6
	3	8	1.2	4.0	15.6
	4	1	.1	.5	16.1
	5	18	2.7	9.0	25.1
	6	1	.1	.5	25.6
	7	1	.1	.5	26.1
	8	1	.1	.5	26.6
	10	30	4.5	15.1	41.7
	11	2	.3	1.0	42.7
	13	1	.1	.5	43.2
	14	1	.1	.5	43.7
	15	16	2.4	8.0	51.8
	18	1	.1	.5	52.3
	19	1	.1	.5	52.8
	20	11	1.6	5.5	58.3
	24	1	.1	.5	58.8
	25	13	1.9	6.5	65.3
	28	1	.1	.5	65.8
	30	7	1.0	3.5	69.3
	33	1	.1	.5	69.8
	35	6	.9	3.0	72.9
	38	2	.3	1.0	73.9
	39	1	.1	.5	74.4
	40	8	1.2	4.0	78.4
	41	2	.3	1.0	79.4
	45	2	.3	1.0	80.4
	47	1	.1	.5	80.9
	50	7	1.0	3.5	84.4
	54	1	.1	.5	84.9
	55	1	.1	.5	85.4
	58	1	.1	.5	85.9
	60	10	1.5	5.0	91.0
	65	2	.3	1.0	92.0
	69	1	.1	.5	92.5
	70	3	.4	1.5	94.0
	75	1	.1	.5	94.5
	80	2	.3	1.0	95.5
	85	3	.4	1.5	97.0
	90	2	.3	1.0	98.0
	95	1	.1	.5	98.5
	99	3	.4	1.5	100.0
	.	469	70.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 25.492 Std Dev 24.637 Minimum .000
Maximum 99.000

Valid Cases 199 Missing Cases 469

85A Contact Prescriber

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	6	.9	1.0	1.0
	1	49	7.3	8.3	9.3
	2	66	9.9	11.1	20.4
	3	60	9.0	10.1	30.5
	4	27	4.0	4.6	35.1
	5	92	13.8	15.5	50.6
	6	23	3.4	3.9	54.5
	7	5	.7	.8	55.3
	8	7	1.0	1.2	56.5
	10	115	17.2	19.4	75.9
	11	1	.1	.2	76.1
	12	6	.9	1.0	77.1
	13	1	.1	.2	77.2
	14	1	.1	.2	77.4
	15	36	5.4	6.1	83.5
	16	1	.1	.2	83.6
	18	3	.4	.5	84.1
	20	47	7.0	7.9	92.1
	21	1	.1	.2	92.2
	25	15	2.2	2.5	94.8
	30	12	1.8	2.0	96.8
	35	2	.3	.3	97.1
	40	4	.6	.7	97.8
	50	5	.7	.8	98.7
	60	1	.1	.2	98.8
	72	1	.1	.2	99.0
	80	3	.4	.5	99.5
	96	1	.1	.2	99.7
	100	1	.1	.2	99.8
	200	1	.1	.2	100.0
	.	75	11.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 10.071 Std Dev 13.944 Minimum .000
Maximum 200.000

Valid Cases 593 Missing Cases 75

B5B Be Contacted by Prescriber

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	64	9.6	12.1	12.1
	0	1	.1	.2	12.2
	1	155	23.2	29.2	41.4
	2	99	14.8	18.6	60.1
	3	43	6.4	8.1	68.2
	4	14	2.1	2.6	70.8
	5	83	12.4	15.6	86.4
	6	5	.7	.9	87.4
	7	1	.1	.2	87.6
	8	4	.6	.8	88.3
	9	1	.1	.2	88.5
	10	41	6.1	7.7	96.2
	12	1	.1	.2	96.4
	15	6	.9	1.1	97.6
	20	8	1.2	1.5	99.1
	25	1	.1	.2	99.2
	28	1	.1	.2	99.4
	30	1	.1	.2	99.6
	50	1	.1	.2	99.8
	80	1	.1	.2	100.0
	.	137	20.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 3.609 Std Dev 5.645 Minimum .000
Maximum 80.000

Valid Cases 531 Missing Cases 137

B5C Recommend to prescriber

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	66	9.9	12.2	12.2
	0	1	.1	.2	12.4
	1	131	19.6	24.2	36.5
	2	105	15.7	19.4	55.9
	3	38	5.7	7.0	62.9
	4	18	2.7	3.3	66.2
	5	69	10.3	12.7	79.0
	6	6	.9	1.1	80.1
	7	2	.3	.4	80.4
	8	7	1.0	1.3	81.7
	10	51	7.6	9.4	91.1
	12	1	.1	.2	91.3
	15	17	2.5	3.1	94.5
	17	1	.1	.2	94.6
	20	11	1.6	2.0	96.7
	25	7	1.0	1.3	98.0
	30	2	.3	.4	98.3
	40	3	.4	.6	98.9
	50	4	.6	.7	99.6
	72	1	.1	.2	99.8
	125	1	.1	.2	100.0
	.	126	18.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 5.063 Std Dev 9.152 Minimum .000
Maximum 125.000

Valid Cases 542 Missing Cases 126

B5D Non-Rx Recommendations to Patients

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	43	6.4	8.9	8.9
	1	14	2.1	2.9	11.8
	2	18	2.7	3.7	15.5
	3	7	1.0	1.4	16.9
	4	5	.7	1.0	18.0
	5	36	5.4	7.4	25.4
	6	12	1.8	2.5	27.9
	7	1	.1	.2	28.1
	8	3	.4	.6	28.7
	10	58	8.7	12.0	40.7
	12	8	1.2	1.7	42.4
	13	1	.1	.2	42.6
	14	1	.1	.2	42.8
	15	18	2.7	3.7	46.5
	16	1	.1	.2	46.7
	17	2	.3	.4	47.1
	20	45	6.7	9.3	56.4
	25	30	4.5	6.2	62.6
	27	1	.1	.2	62.8
	30	31	4.6	6.4	69.2
	35	4	.6	.8	70.0
	38	1	.1	.2	70.2
	40	15	2.2	3.1	73.3
	50	56	8.4	11.6	84.9
	60	13	1.9	2.7	87.6
	75	8	1.2	1.7	89.3
	80	4	.6	.8	90.1
	100	32	4.8	6.6	96.7
	110	1	.1	.2	96.9
	120	2	.3	.4	97.3
	140	1	.1	.2	97.5
	150	4	.6	.8	98.3
	200	3	.4	.6	99.0
	500	1	.1	.2	99.2
	525	1	.1	.2	99.4
	600	1	.1	.2	99.6
	700	1	.1	.2	99.8
	750	1	.1	.2	100.0
	.	184	27.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 35.634 Std Dev 68.723 Minimum .000
Maximum 750.000

Valid Cases 484 Missing Cases 184

B5E Counselling Prescriber

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	111	16.6	22.4	22.4
	1	142	21.3	28.6	51.0
	2	80	12.0	16.1	67.1
	3	28	4.2	5.6	72.8
	4	9	1.3	1.8	74.6
	5	55	8.2	11.1	85.7
	6	3	.4	.6	86.3
	7	3	.4	.6	86.9
	8	5	.7	1.0	87.9
	10	26	3.9	5.2	93.1
	12	2	.3	.4	93.5
	14	1	.1	.2	93.8
	15	5	.7	1.0	94.8
	20	10	1.5	2.0	96.8
	25	8	1.2	1.6	98.4
	30	2	.3	.4	98.8
	50	1	.1	.2	99.0
	60	2	.3	.4	99.4
	72	1	.1	.2	99.6
	80	1	.1	.2	99.8
	102	1	.1	.2	100.0
	.	172	25.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 4.099 Std Dev 9.120 Minimum .000
Maximum 102.000

Valid Cases 496 Missing Cases 172

B5F Counselling a patient

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	30	4.5	5.6	5.6
	1	34	5.1	6.3	11.9
	2	30	4.5	5.6	17.5
	3	12	1.8	2.2	19.8
	4	7	1.0	1.3	21.1
	5	49	7.3	9.1	30.2
	6	6	.9	1.1	31.3
	7	2	.3	.4	31.7
	8	2	.3	.4	32.1
	10	69	10.3	12.9	45.0
	12	6	.9	1.1	46.1
	13	4	.6	.7	46.8
	14	1	.1	.2	47.0
	15	19	2.8	3.5	50.6
	16	1	.1	.2	50.7
	17	1	.1	.2	50.9
	18	1	.1	.2	51.1
	20	39	5.8	7.3	58.4
	24	2	.3	.4	58.8
	25	17	2.5	3.2	61.9
	27	1	.1	.2	62.1
	30	23	3.4	4.3	66.4
	33	1	.1	.2	66.6
	35	2	.3	.4	67.0
	40	12	1.8	2.2	69.2
	50	48	7.2	9.0	78.2
	55	1	.1	.2	78.4
	60	4	.6	.7	79.1
	63	1	.1	.2	79.3
	70	1	.1	.2	79.5
	75	3	.4	.6	80.0
	80	5	.7	.9	81.0
	85	2	.3	.4	81.3
	90	3	.4	.6	81.9
	100	39	5.8	7.3	89.2
	120	1	.1	.2	89.4
	125	2	.3	.4	89.7
	130	1	.1	.2	89.9
	140	1	.1	.2	90.1
	150	11	1.6	2.1	92.2
	190	1	.1	.2	92.4
	200	18	2.7	3.4	95.7
	250	6	.9	1.1	96.8
	300	9	1.3	1.7	98.5
	400	1	.1	.2	98.7
	500	4	.6	.7	99.4
	600	2	.3	.4	99.8
	900	1	.1	.2	100.0
	.	132	19.8	MISSING	
	TOTAL	668	100.0	100.0	

B5F Counselling a patient

Mean	49.924	Std Dev	90.027
Maximum	900.000	Minimum	.000

Valid Cases 536 Missing Cases 132

B5G Contacted by Pharma Co Rep

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	68	10.2	12.8	12.8
	1	85	12.7	16.0	28.9
	2	96	14.4	18.1	47.0
	3	69	10.3	13.0	60.0
	4	21	3.1	4.0	64.0
	5	86	12.9	16.2	80.2
	6	20	3.0	3.8	84.0
	7	5	.7	.9	84.9
	8	8	1.2	1.5	86.4
	10	49	7.3	9.2	95.7
	12	6	.9	1.1	96.8
	13	1	.1	.2	97.0
	14	2	.3	.4	97.4
	15	7	1.0	1.3	98.7
	20	4	.6	.8	99.4
	25	1	.1	.2	99.6
	30	1	.1	.2	99.8
	61	1	.1	.2	100.0
	.	138	20.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean	4.002	Std Dev	4.624
Maximum	61.000	Minimum	.000

Valid Cases 530 Missing Cases 138

86 Restrictions on Pharma Co Reps

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No Restrictions	1	372	55.7	60.7	60.7
No Visits Permitted	2	6	.9	1.0	61.7
Some Restrictions	3	235	35.2	38.3	100.0
	.	55	8.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.777 Std Dev .970 Minimum 1.000
Maximum 3.000

Valid Cases 613 Missing Cases 55

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87A Drug Samples

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	185	27.7	42.8	42.8
	1	28	4.2	6.5	49.3
	2	51	7.6	11.8	61.1
	3	24	3.6	5.6	66.7
	4	13	1.9	3.0	69.7
	5	25	3.7	5.8	75.5
	6	29	4.3	6.7	82.2
	7	1	.1	.2	82.4
	8	1	.1	.2	82.6
	10	41	6.1	9.5	92.1
	12	7	1.0	1.6	93.8
	15	5	.7	1.2	94.9
	20	8	1.2	1.9	96.8
	24	1	.1	.2	97.0
	25	2	.3	.5	97.5
	30	3	.4	.7	98.1
	50	6	.9	1.4	99.5
	100	1	.1	.2	99.8
	999	1	.1	.2	100.0
	.	236	35.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 6.620 Std Dev 48.659 Minimum .000
Maximum 999.000

Valid Cases 432 Missing Cases 236

87B Meals

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	224	33.5	54.2	54.2
	1	36	5.4	8.7	63.0
	2	46	6.9	11.1	74.1
	3	28	4.2	6.8	80.9
	4	11	1.6	2.7	83.5
	5	27	4.0	6.5	90.1
	6	5	.7	1.2	91.3
	8	3	.4	.7	92.0
	10	19	2.8	4.6	96.6
	11	1	.1	.2	96.9
	12	3	.4	.7	97.6
	15	1	.1	.2	97.8
	20	3	.4	.7	98.5
	24	1	.1	.2	98.8
	25	1	.1	.2	99.0
	30	1	.1	.2	99.3
	36	1	.1	.2	99.5
	40	1	.1	.2	99.8
	50	1	.1	.2	100.0
	.	255	38.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.329 Std Dev 5.127 Minimum .000
Maximum 50.000

Valid Cases 413 Missing Cases 255

B7C Conference Fees

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	287	43.0	90.3	90.3
	1	17	2.5	5.3	95.6
	2	5	.7	1.6	97.2
	3	3	.4	.9	98.1
	4	2	.3	.6	98.7
	5	1	.1	.3	99.1
	6	1	.1	.3	99.4
	10	1	.1	.3	99.7
	12	1	.1	.3	100.0
	.	350	52.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean .242 Std Dev 1.098 Minimum .000
Maximum 12.000

Valid Cases 318 Missing Cases 350

B7D Free Goods or Rebates

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	189	28.3	48.1	48.1
	1	23	3.4	5.9	53.9
	2	40	6.0	10.2	64.1
	3	25	3.7	6.4	70.5
	4	11	1.6	2.8	73.3
	5	21	3.1	5.3	78.6
	6	14	2.1	3.6	82.2
	8	1	.1	.3	82.4
	10	31	4.6	7.9	90.3
	12	4	.6	1.0	91.3
	15	4	.6	1.0	92.4
	20	12	1.8	3.1	95.4
	24	1	.1	.3	95.7
	25	4	.6	1.0	96.7
	30	4	.6	1.0	97.7
	40	3	.4	.8	98.5
	50	4	.6	1.0	99.5
	100	2	.3	.5	100.0
	.	275	41.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 4.684 Std Dev 10.583 Minimum .000
Maximum 100.000

Valid Cases 393 Missing Cases 275

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B7E Travel Expenses

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	291	43.6	93.6	93.6
	1	11	1.6	3.5	97.1
	2	5	.7	1.6	98.7
	3	1	.1	.3	99.0
	4	1	.1	.3	99.4
	5	1	.1	.3	99.7
	10	1	.1	.3	100.0
	.	357	53.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean .138 Std Dev .751 Minimum .000
Maximum 10.000

Valid Cases 311 Missing Cases 357

B7F Gifts or Bonuses

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	251	37.6	72.3	72.3
	1	39	5.8	11.2	83.6
	2	22	3.3	6.3	89.9
	3	9	1.3	2.6	92.5
	4	3	.4	.9	93.4
	5	10	1.5	2.9	96.3
	6	3	.4	.9	97.1
	8	3	.4	.9	98.0
	10	4	.6	1.2	99.1
	20	3	.4	.9	100.0
	.	321	48.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean .905 Std Dev 2.476 Minimum .000
Maximum 20.000

Valid Cases 347 Missing Cases 321

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B7G Computer Hardware/Software

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	288	43.1	94.4	94.4
	1	12	1.8	3.9	98.4
	2	3	.4	1.0	99.3
	3	1	.1	.3	99.7
	4	1	.1	.3	100.0
	.	363	54.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean .082 Std Dev .393 Minimum .000
Maximum 4.000

Valid Cases 305 Missing Cases 363

B7H Other

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	84	12.6	66.1	66.1
	1	13	1.9	10.2	76.4
	2	8	1.2	6.3	82.7
	3	8	1.2	6.3	89.0
	4	1	.1	.8	89.8
	5	2	.3	1.6	91.3
	6	4	.6	3.1	94.5
	10	4	.6	3.1	97.6
	12	1	.1	.8	98.4
	20	1	.1	.8	99.2
	25	1	.1	.8	100.0
	.	541	81.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.480 Std Dev 3.583 Minimum .000
Maximum 25.000

Valid Cases 127 Missing Cases 541

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B8A Thera Decision Mkg

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	123	18.4	18.8	18.8
Neutral	2	153	22.9	23.4	42.1
Approve	3	379	56.7	57.9	100.0
	.	13	1.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.391 Std Dev .784 Minimum 1.000
Maximum 3.000

Valid Cases 655 Missing Cases 13

88B Counselling Patients

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	6	.9	.9	.9
Neutral	2	30	4.5	4.6	5.5
Approve	3	622	93.1	94.5	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.936 Std Dev .279 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

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88C Counselling Prescribers

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	61	9.1	9.3	9.3
Neutral	2	183	27.4	27.9	37.3
Approve	3	411	61.5	62.7	100.0
	.	13	1.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.534 Std Dev .660 Minimum 1.000
Maximum 3.000

Valid Cases 655 Missing Cases 13

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88D Counselling re Non-Rx Alternatives

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	79	11.8	12.0	12.0
Neutral	2	245	36.7	37.3	49.4
Approve	3	332	49.7	50.6	100.0
	.	12	1.8	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.386 Std Dev .692 Minimum 1.000
Maximum 3.000

Valid Cases 656 Missing Cases 12

88E Monitoring Rx Treatments

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	57	8.5	8.8	8.8
Neutral	2	101	15.1	15.7	24.5
Approve	3	487	72.9	75.5	100.0
	.	23	3.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.667 Std Dev .632 Minimum 1.000
Maximum 3.000

Valid Cases 645 Missing Cases 23

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88F Home Visits

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	226	33.8	34.7	34.7
Neutral	2	235	35.2	36.1	70.8
Approve	3	190	28.4	29.2	100.0
	.	17	2.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.945 Std Dev .798 Minimum 1.000
Maximum 3.000

Valid Cases 651 Missing Cases 17

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88G Health Promotion

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	53	7.9	8.1	8.1
Neutral	2	177	26.5	27.1	35.2
Approve	3	423	63.3	64.8	100.0
	.	15	2.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.567 Std Dev .639 Minimum 1.000
Maximum 3.000

Valid Cases 653 Missing Cases 15

B8H Other

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Neutral	2	1	.1	3.6	3.6
Approve	3	27	4.0	96.4	100.0
	.	640	95.8	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.964 Std Dev .189 Minimum 2.000
Maximum 3.000

Valid Cases 28 Missing Cases 640

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B9A DAs Comm College

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	196	29.3	29.7	29.7
Neutral	2	97	14.5	14.7	44.5
Agree	3	366	54.8	55.5	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.258 Std Dev .887 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

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B9B DAs Receive Written RXs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	97	14.5	14.9	14.9
Neutral	2	68	10.2	10.5	25.4
Agree	3	484	72.5	74.6	100.0
	.	19	2.8	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.596 Std Dev .735 Minimum 1.000
Maximum 3.000

Valid Cases 649 Missing Cases 19

B9C DAs Dispense Simple RXs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	117	17.5	18.0	18.0
Neutral	2	83	12.4	12.8	30.8
Agree	3	449	67.2	69.2	100.0
	.	19	2.8	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.512 Std Dev .782 Minimum 1.000
Maximum 3.000

Valid Cases 649 Missing Cases 19

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B9D DAs Wear ID Tags

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	19	2.8	2.9	2.9
Neutral	2	73	10.9	11.1	14.0
Agree	3	567	84.9	86.0	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.832 Std Dev .445 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

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B9E DAs Give Non-RX Info

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	507	75.9	77.6	77.6
Neutral	2	70	10.5	10.7	88.4
Agree	3	76	11.4	11.6	100.0
	.	15	2.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.340 Std Dev .677 Minimum 1.000
Maximum 3.000

Valid Cases 653 Missing Cases 15

B10 Max No DAs per Pharmacist

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	3	.4	.5	.5
	1	91	13.6	15.2	15.7
	2	334	50.0	55.7	71.3
	3	132	19.8	22.0	93.3
	4	23	3.4	3.8	97.2
	5	9	1.3	1.5	98.7
	6	1	.1	.2	98.8
	10	3	.4	.5	99.3
	21	2	.3	.3	99.7
	99	2	.3	.3	100.0
	.	68	10.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.613 Std Dev 5.768 Minimum .000
Maximum 99.000

Valid Cases 600 Missing Cases 68

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C1A ODB Fees Lower

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	517	77.4	80.8	80.8
Neutral	2	64	9.6	10.0	90.8
Approve	3	59	8.8	9.2	100.0
	.	28	4.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.284 Std Dev .623 Minimum 1.000
Maximum 3.000

Valid Cases 640 Missing Cases 28

C1B Renewal Fees Lower

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	469	70.2	72.5	72.5
Neutral	2	90	13.5	13.9	86.4
Approve	3	88	13.2	13.6	100.0
	.	21	3.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.411 Std Dev .718 Minimum 1.000
Maximum 3.000

Valid Cases 647 Missing Cases 21

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C1C Fees Linked to Costs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	372	55.7	57.7	57.7
Neutral	2	76	11.4	11.8	69.5
Approve	3	197	29.5	30.5	100.0
	.	23	3.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.729 Std Dev .900 Minimum 1.000
Maximum 3.000

Valid Cases 645 Missing Cases 23

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C1D ODB Fees Lower for Non-Rx Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	381	57.0	59.2	59.2
Neutral	2	120	18.0	18.6	77.8
Approve	3	143	21.4	22.2	100.0
	.	24	3.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.630 Std Dev .823 Minimum 1.000
Maximum 3.000

Valid Cases 644 Missing Cases 24

C1E Same Fees for Hosps and Retail Outlets

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	125	18.7	20.2	20.2
Neutral	2	86	12.9	13.9	34.0
Approve	3	409	61.2	66.0	100.0
	.	48	7.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.458 Std Dev .808 Minimum 1.000
Maximum 3.000

Valid Cases 620 Missing Cases 48

C1F ODB Remuneration for Home Visits

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	51	7.6	8.0	8.0
Neutral	2	144	21.6	22.7	30.8
Approve	3	439	65.7	69.2	100.0
	.	34	5.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.612 Std Dev .632 Minimum 1.000
Maximum 3.000

Valid Cases 634 Missing Cases 34

C2A Post Fees for Interchangeable Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	162	24.3	25.1	25.1
Neutral	2	124	18.6	19.2	44.3
Approve	3	359	53.7	55.7	100.0
	.	23	3.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.305 Std Dev .846 Minimum 1.000
Maximum 3.000

Valid Cases 645 Missing Cases 23

C2B Drug Cost & Fee on RX Receipt

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	203	30.4	31.5	31.5
Neutral	2	126	18.9	19.5	51.0
Approve	3	316	47.3	49.0	100.0
	.	23	3.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.175 Std Dev .880 Minimum 1.000
Maximum 3.000

Valid Cases 645 Missing Cases 23

C2C Cost and Fee on RX Receipt to ODB Recipi

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	213	31.9	33.1	33.1
Neutral	2	148	22.2	23.0	56.1
Approve	3	283	42.4	43.9	100.0
	.	24	3.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.109 Std Dev .872 Minimum 1.000
Maximum 3.000

Valid Cases 644 Missing Cases 24

C2D Cost & fee on Receipt to 3rd Party Recip

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	187	28.0	29.1	29.1
Neutral	2	150	22.5	23.3	52.4
Approve	3	306	45.8	47.6	100.0
	.	25	3.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.185 Std Dev .857 Minimum 1.000
Maximum 3.000

Valid Cases 643 Missing Cases 25

C3 OOBs Increase No of RXs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Infrequently	1	50	7.5	8.6	8.6
Sometimes	2	139	20.8	23.9	32.5
Frequently	3	392	58.7	67.5	100.0
	.	87	13.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.589 Std Dev .644 Minimum 1.000
Maximum 3.000

Valid Cases 581 Missing Cases 87

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C4A Aging Population

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	22	3.3	3.3	3.3
Somewhat Important	2	102	15.3	15.4	18.8
Very Important	3	537	80.4	81.2	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.779 Std Dev .489 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

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C4B More Effective Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	35	5.2	5.3	5.3
Somewhat Important	2	153	22.9	23.1	28.4
Very Important	3	473	70.8	71.6	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.663 Std Dev .574 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

C4C Drug Company Profits

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	147	22.0	22.5	22.5
Somewhat Important	2	235	35.2	36.0	58.5
Very Important	3	271	40.6	41.5	100.0
	.	15	2.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.190 Std Dev .778 Minimum 1.000
Maximum 3.000

Valid Cases 653 Missing Cases 15

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C4D No Emphasis on Prevention

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	66	9.9	10.0	10.0
Somewhat Important	2	181	27.1	27.5	37.5
Very Important	3	412	61.7	62.5	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.525 Std Dev .671 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

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C4E Increase Enrolment Drug Plans

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	86	12.9	13.1	13.1
Somewhat Important	2	166	24.9	25.2	38.3
Very Important	3	406	60.8	61.7	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.486 Std Dev .716 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

C4F Pharmacists Dispensing Fees

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	443	66.3	67.4	67.4
Somewhat Important	2	171	25.6	26.0	93.5
Very Important	3	43	6.4	6.5	100.0
	.	11	1.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean	1.391	Std Dev	.608	Minimum	1.000
Maximum	3.000				

Valid Cases 657 Missing Cases 11

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C4G Bioengineered Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	180	26.9	28.8	28.8
Somewhat Important	2	242	36.2	38.7	67.4
Very Important	3	204	30.5	32.6	100.0
	.	42	6.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean	2.038	Std Dev	.783	Minimum	1.000
Maximum	3.000				

Valid Cases 626 Missing Cases 42

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C4H No Infc Re Non-Rx Therapies

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	201	30.1	30.8	30.8
Somewhat Important	2	228	34.1	34.9	65.7
Very Important	3	224	33.5	34.3	100.0
	.	15	2.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean	2.035	Std Dev	.807	Minimum	1.000
Maximum	3.000				

Valid Cases 653 Missing Cases 15

C4I No Responsibility for Health

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	112	16.8	17.0	17.0
Somewhat Important	2	198	29.6	30.1	47.2
Very Important	3	347	51.9	52.8	100.0
	.	11	1.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean	2.358	Std Dev	.756	Minimum	1.000
Maximum	3.000				

Valid Cases 657 Missing Cases 11

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C4J Other

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Not Important	1	2	.3	1.6	1.8
Somewhat Important	2	8	1.2	7.1	8.8
Very Important	3	103	15.4	91.2	100.0
	.	555	83.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean	2.894	Std Dev	.363	Minimum	1.000
Maximum	3.000				

Valid Cases 113 Missing Cases 555

C5 Percent RXs Not Necessary

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	12	1.8	2.1	2.1
	1	11	1.6	2.0	4.1
	2	7	1.0	1.2	5.3
	3	10	1.5	1.8	7.1
	4	1	.1	.2	7.3
	5	76	11.4	13.5	20.8
	6	1	.1	.2	21.0
	8	1	.1	.2	21.2
	10	135	20.2	24.0	45.2
	13	1	.1	.2	45.4
	15	59	8.8	10.5	55.9
	17	1	.1	.2	56.0
	20	80	12.0	14.2	70.3
	25	55	8.2	9.8	80.1
	30	46	6.9	8.2	88.3
	33	2	.3	.4	88.6
	35	7	1.0	1.2	89.9
	40	21	3.1	3.7	93.6
	45	3	.4	.5	94.1
	50	24	3.6	4.3	98.4
	60	5	.7	.9	99.3
	70	2	.3	.4	99.6
	80	1	.1	.2	99.8
	90	1	.1	.2	100.0
	.	106	15.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 18.094 Std Dev 13.738 Minimum .000
Maximum 90.000

Valid Cases 562 Missing Cases 106

C6 Percent Drugs Not Effective

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	11	1.6	2.1	2.1
	1	14	2.1	2.7	4.9
	2	13	1.9	2.5	7.4
	3	8	1.2	1.6	9.0
	4	5	.7	1.0	10.0
	5	91	13.6	17.8	27.7
	6	1	.1	.2	27.9
	7	1	.1	.2	28.1
	8	1	.1	.2	28.3
	9	1	.1	.2	28.5
	10	144	21.6	28.1	56.6
	12	2	.3	.4	57.0
	15	30	4.5	5.9	62.9
	20	72	10.8	14.1	77.0
	25	38	5.7	7.4	84.4
	30	33	4.9	6.4	90.8
	33	1	.1	.2	91.0
	35	5	.7	1.0	92.0
	40	7	1.0	1.4	93.4
	50	20	3.0	3.9	97.3
	51	1	.1	.2	97.5
	60	5	.7	1.0	98.4
	70	4	.6	.8	99.2
	80	4	.6	.8	100.0
	.	156	23.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 16.215 Std Dev 14.403 Minimum .000
Maximum 80.000

Valid Cases 512 Missing Cases 156

C7A Annual patient co-payment

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	334	50.0	52.1	52.1
Neutral	2	117	17.5	18.3	70.4
Agree	3	190	28.4	29.6	100.0
	.	27	4.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.775 Std Dev .876 Minimum 1.000
Maximum 3.000

Valid Cases 641 Missing Cases 27

C7B Co-payment for each Rx

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	226	33.8	35.1	35.1
Neutral	2	83	12.4	12.9	48.1
Agree	3	334	50.0	51.9	100.0
	.	25	3.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.168 Std Dev .919 Minimum 1.000
Maximum 3.000

Valid Cases 643 Missing Cases 25

C7C Co-payments as % of Rx Cost

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	286	42.8	44.5	44.5
Neutral	2	104	15.6	16.2	60.7
Agree	3	253	37.9	39.3	100.0
	.	25	3.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.949 Std Dev .915 Minimum 1.000
Maximum 3.000

Valid Cases 643 Missing Cases 25

C7D OCB Benefits Taxable

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	405	60.6	63.8	63.8
Neutral	2	100	15.0	15.7	79.5
Agree	3	130	19.5	20.5	100.0
	.	33	4.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.567 Std Dev .810 Minimum 1.000
Maximum 3.000

Valid Cases 635 Missing Cases 33

C8 Conflict re Pharma Co Benefits

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	185	27.7	27.9	27.9
Neutral	2	146	21.9	22.1	50.0
Agree	3	331	49.6	50.0	100.0
	.	6	.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.221 Std Dev .856 Minimum 1.000
Maximum 3.000

Valid Cases 662 Missing Cases 6

C9 OCP Enforce Conflict Guidelines

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disagree	1	157	23.5	23.7	23.7
Neutral	2	144	21.6	21.7	45.4
Agree	3	362	54.2	54.6	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.309 Std Dev .830 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

C10A Sub low cost if No Sub Order Absent

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	194	29.0	29.4	29.4
Neutral	2	77	11.5	11.7	41.1
Approve	3	388	58.1	58.9	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.294 Std Dev .893 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

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C10B Computerized Drug Info System

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	114	17.1	17.4	17.4
Neutral	2	121	18.1	18.4	35.8
Approve	3	422	63.2	64.2	100.0
	.	11	1.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.469 Std Dev .773 Minimum 1.000
Maximum 3.000

Valid Cases 657 Missing Cases 11

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C10C Use & Side-Effects Info with Each Rx

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	228	34.1	34.4	34.4
Neutral	2	143	21.4	21.6	56.0
Approve	3	292	43.7	44.0	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.097 Std Dev .881 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

C10D Fixed Annual Fee for Dispensing

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	534	79.9	81.0	81.0
Neutral	2	90	13.5	13.7	94.7
Approve	3	35	5.2	5.3	100.0
	.	9	1.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.243 Std Dev .539 Minimum 1.000
Maximum 3.000

Valid Cases 659 Missing Cases 9

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C10E Pharmacists Report Double Doctoring

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	78	11.7	11.8	11.8
Neutral	2	90	13.5	13.6	25.5
Approve	3	492	73.7	74.5	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.627 Std Dev .686 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

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C10F Pharmacists Inform Patients re Sub

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	199	29.8	30.2	30.2
Neutral	2	142	21.3	21.5	51.7
Approve	3	319	47.8	48.3	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.182 Std Dev .868 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

C10G Licence New Drugs Only If Improvement De

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	146	21.9	22.1	22.1
Neutral	2	65	9.7	9.8	31.9
Approve	3	451	67.5	68.1	100.0
	.	6	.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.461 Std Dev .831 Minimum 1.000
Maximum 3.000

Valid Cases 662 Missing Cases 6

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C10H Make Public Drug Co Benefits Over $100

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	125	18.7	19.0	19.0
Neutral	2	189	28.3	28.7	47.7
Approve	3	344	51.5	52.3	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.333 Std Dev .776 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

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C10I Drug Co Ads to Include Contraindications

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	39	5.8	5.9	5.9
Neutral	2	74	11.1	11.2	17.1
Approve	3	548	82.0	82.9	100.0
	.	7	1.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.770 Std Dev .544 Minimum 1.000
Maximum 3.000

Valid Cases 661 Missing Cases 7

C10J Patent Protection Limit to Two Years

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	447	66.9	67.9	67.9
Neutral	2	111	16.6	16.9	84.8
Approve	3	100	15.0	15.2	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.473 Std Dev .744 Minimum 1.000
Maximum 3.000

Valid Cases 658 Missing Cases 10

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C10K Limit No of Products Covered

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	238	35.6	36.6	36.6
Neutral	2	108	16.2	16.6	53.2
Approve	3	304	45.5	46.8	100.0
	.	18	2.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.102 Std Dev .908 Minimum 1.000
Maximum 3.000

Valid Cases 650 Missing Cases 18

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C10L Eliminate Drug Samples

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	191	28.6	29.2	29.2
Neutral	2	174	26.0	26.6	55.9
Approve	3	288	43.1	44.1	100.0
	.	15	2.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.149 Std Dev .844 Minimum 1.000
Maximum 3.000

Valid Cases 653 Missing Cases 15

C10M Professional Review System

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	46	6.9	7.1	7.1
Neutral	2	111	16.6	17.1	24.2
Approve	3	492	73.7	75.8	100.0
	.	19	2.8	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.687 Std Dev .598 Minimum 1.000
Maximum 3.000

Valid Cases 649 Missing Cases 19

C10N Hospital Review Committees

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	43	6.4	6.9	6.9
Neutral	2	135	20.2	21.7	28.6
Approve	3	444	66.5	71.4	100.0
	.	46	6.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.645 Std Dev .607 Minimum 1.000
Maximum 3.000

Valid Cases 622 Missing Cases 46

C10O Accredited Cont'g Ed Courses

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	8	1.2	1.2	1.2
Neutral	2	83	12.4	12.7	14.0
Approve	3	560	83.8	86.0	100.0
	.	17	2.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.848 Std Dev .392 Minimum 1.000
Maximum 3.000

Valid Cases 651 Missing Cases 17

C10P Random Audits of MDs Practices

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	62	9.3	9.6	9.6
Neutral	2	180	26.9	27.8	37.4
Approve	3	405	60.6	62.6	100.0
	.	21	3.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.530 Std Dev .664 Minimum 1.000
Maximum 3.000

Valid Cases 647 Missing Cases 21

C10Q MDs ID on All Rxs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	58	8.7	9.0	9.0
Neutral	2	149	22.3	23.0	32.0
Approve	3	440	65.9	68.0	100.0
	.	21	3.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.590 Std Dev .649 Minimum 1.000
Maximum 3.000

Valid Cases 647 Missing Cases 21

C10R ODB Plan to Cover All Ontario Residents

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	499	74.7	75.6	75.6
Neutral	2	86	12.9	13.0	88.6
Approve	3	75	11.2	11.4	100.0
	.	8	1.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.358 Std Dev .677 Minimum 1.000
Maximum 3.000

Valid Cases 660 Missing Cases 8

C10S Patient SmartCard

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	51	7.6	7.7	7.7
Neutral	2	78	11.7	11.8	19.5
Approve	3	534	79.9	80.5	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.729 Std Dev .593 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

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C10T Limit No of Drugs Insured by ODB Plan

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	149	22.3	22.7	22.7
Neutral	2	98	14.7	14.9	37.6
Approve	3	410	61.4	62.4	100.0
	.	11	1.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.397 Std Dev .833 Minimum 1.000
Maximum 3.000

Valid Cases 657 Missing Cases 11

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C10U Eliminate ODB Coverage of Non-Rx Drugs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	198	29.6	29.9	29.9
Neutral	2	116	17.4	17.5	47.4
Approve	3	348	52.1	52.6	100.0
	.	6	.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.227 Std Dev .880 Minimum 1.000
Maximum 3.000

Valid Cases 662 Missing Cases 6

C10V Drug Ed in High Schools

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Disapprove	1	22	3.3	3.3	3.3
Neutral	2	94	14.1	14.2	17.5
Approve	3	548	82.0	82.5	100.0
	.	4	.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.792 Std Dev .481 Minimum 1.000
Maximum 3.000

Valid Cases 664 Missing Cases 4

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C11 Improvement/Monitoring Strategies

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	1	.1	50.0	50.0
	0	1	.1	50.0	100.0
	.	666	99.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean .250 Std Dev .212 Minimum .100
Maximum .400

Valid Cases 2 Missing Cases 666

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D1 Type of Pharmacy

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Community Pharm	1	386	57.8	59.6	59.6
Hospital Pharm	2	233	34.9	36.0	95.5
Other	3	29	4.3	4.5	100.0
	.	20	3.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.449 Std Dev .581 Minimum 1.000
Maximum 3.000

Valid Cases 648 Missing Cases 20

D2A Full-time Pharmacists

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	4	.6	.7	.7
	1	182	27.2	29.6	30.3
	2	180	26.9	29.3	59.6
	3	60	9.0	9.8	69.4
	4	41	6.1	6.7	76.1
	5	29	4.3	4.7	80.8
	6	8	1.2	1.3	82.1
	7	5	.7	.8	82.9
	9	5	.7	.8	83.7
	10	6	.9	1.0	84.7
	11	5	.7	.8	85.5
	12	6	.9	1.0	86.5
	13	8	1.2	1.3	87.8
	14	7	1.0	1.1	88.9
	15	7	1.0	1.1	90.1
	16	2	.3	.3	90.4
	17	2	.3	.3	90.7
	18	3	.4	.5	91.2
	19	2	.3	.3	91.5
	20	5	.7	.8	92.3
	21	3	.4	.5	92.8
	22	2	.3	.3	93.2
	23	3	.4	.5	93.6
	24	2	.3	.3	94.0
	25	8	1.2	1.3	95.3
	27	1	.1	.2	95.4
	30	9	1.3	1.5	96.9
	31	1	.1	.2	97.1
	32	1	.1	.2	97.2
	35	1	.1	.2	97.4
	40	8	1.2	1.3	98.7
	42	1	.1	.2	98.9
	43	2	.3	.3	99.2
	45	3	.4	.5	99.7
	47	1	.1	.2	99.8
	50	1	.1	.2	100.0
	.	54	8.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean	5.554	Std Dev	8.765	Minimum	.000
Maximum	50.000				

Valid Cases 614 Missing Cases 54

D2B Part-time Pharmacists

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	27	4.0	6.2	6.2
	1	157	23.5	36.3	42.5
	2	114	17.1	26.3	68.8
	3	57	8.5	13.2	82.0
	4	36	5.4	8.3	90.3
	5	24	3.6	5.5	95.8
	6	7	1.0	1.6	97.5
	7	4	.6	.9	98.4
	8	2	.3	.5	98.8
	9	1	.1	.2	99.1
	10	3	.4	.7	99.8
	15	1	.1	.2	100.0
	.	235	35.2	MISSING	
	TOTAL	668	100.0	100.0	

Mean	2.217	Std Dev	1.771	Minimum	.000
Maximum	15.000				

Valid Cases 433 Missing Cases 235

D2C Full-time DAs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	25	3.7	4.5	4.5
	1	160	24.0	28.6	33.1
	2	124	18.6	22.2	55.3
	3	58	8.7	10.4	65.7
	4	43	6.4	7.7	73.3
	5	10	1.5	1.8	75.1
	6	13	1.9	2.3	77.5
	7	9	1.3	1.6	79.1
	8	13	1.9	2.3	81.4
	9	5	.7	.9	82.3
	10	10	1.5	1.8	84.1
	11	3	.4	.5	84.6
	12	9	1.3	1.6	86.2
	13	5	.7	.9	87.1
	14	4	.6	.7	87.8
	15	5	.7	.9	88.7
	16	6	.9	1.1	89.8
	17	6	.9	1.1	90.9
	18	3	.4	.5	91.4
	19	6	.9	1.1	92.5
	20	8	1.2	1.4	93.9
	21	1	.1	.2	94.1
	25	4	.6	.7	94.8
	27	1	.1	.2	95.0
	29	1	.1	.2	95.2
	30	4	.6	.7	95.9
	32	1	.1	.2	96.1
	35	4	.6	.7	96.8
	36	1	.1	.2	97.0
	40	7	1.0	1.3	98.2
	42	1	.1	.2	98.4
	43	1	.1	.2	98.6
	45	2	.3	.4	98.9
	46	1	.1	.2	99.1
	50	5	.7	.9	100.0
	.	109	16.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 5.927 Std Dev 9.319 Minimum .000
Maximum 50.000

Valid Cases 559 Missing Cases 109

D2D Part-time DAs

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	38	5.7	9.0	9.0
	1	147	22.0	35.0	44.0
	2	119	17.8	28.3	72.4
	3	60	9.0	14.3	86.7
	4	27	4.0	6.4	93.1
	5	17	2.5	4.0	97.1
	6	6	.9	1.4	98.6
	8	1	.1	.2	98.8
	9	1	.1	.2	99.0
	10	4	.6	1.0	100.0
	.	248	37.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.026 Std Dev 1.588 Minimum .000
Maximum 10.000

Valid Cases 420 Missing Cases 248

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D3 Size of Hospital

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Up to 250 beds	1	61	9.1	25.4	25.4
250 to 500 beds	2	82	12.3	34.2	59.6
Over 500 beds	3	97	14.5	40.4	100.0
	.	428	64.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.150 Std Dev .799 Minimum 1.000
Maximum 3.000

Valid Cases 240 Missing Cases 428

D4 Position Description

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Owner	1	96	14.4	23.1	23.1
Franchisee	2	25	3.7	6.0	29.1
Shareholder	3	16	2.4	3.8	32.9
Non-Owner Manager	4	98	14.7	23.6	56.5
Staff Pharmacist	5	181	27.1	43.5	100.0
	.	252	37.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean	3.584	Std Dev	1.620	Minimum	1.000
Maximum	5.000				

Valid Cases 416 Missing Cases 252

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D5 Chain, Franchise, Independent

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Chain	1	106	15.9	27.2	27.2
Franchise	2	66	9.9	16.9	44.1
Independent	3	218	32.6	55.9	100.0
	.	278	41.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean	2.287	Std Dev	.866	Minimum	1.000
Maximum	3.000				

Valid Cases 390 Missing Cases 278

D6 Location of Pharmacy

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Warehouse, merchandi	1	10	1.5	2.6	2.6
In Large Department	2	18	2.7	4.7	7.3
Plaza With Front Sho	3	111	16.6	29.0	36.3
Community (Not Plaza	4	182	27.2	47.5	83.8
Medical Building (Ho	5	62	9.3	16.2	100.0
	.	285	42.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean	3.700	Std Dev	.887	Minimum	1.000
Maximum	5.000				

Valid Cases 383 Missing Cases 285

D7 No of Rxs Dispensed per Week

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	30	1	.1	.3	.3
	50	1	.1	.3	.5
	100	1	.1	.3	.8
	120	1	.1	.3	1.0
	150	2	.3	.5	1.5
	200	2	.3	.5	2.1
	210	1	.1	.3	2.3
	225	1	.1	.3	2.6
	230	1	.1	.3	2.8
	250	5	.7	1.3	4.1
	275	1	.1	.3	4.4
	280	1	.1	.3	4.6
	300	8	1.2	2.1	6.7
	310	1	.1	.3	6.9
	320	1	.1	.3	7.2
	325	1	.1	.3	7.5
	350	10	1.5	2.6	10.0
	360	3	.4	.8	10.8
	375	1	.1	.3	11.1
	385	1	.1	.3	11.3
	400	20	3.0	5.1	16.5
	450	11	1.6	2.8	19.3
	475	1	.1	.3	19.5
	480	1	.1	.3	19.8
	500	24	3.6	6.2	26.0
	520	1	.1	.3	26.2
	525	2	.3	.5	26.7
	530	1	.1	.3	27.0
	540	1	.1	.3	27.2
	550	3	.4	.8	28.0
	560	1	.1	.3	28.3
	580	1	.1	.3	28.5
	595	1	.1	.3	28.8
	600	23	3.4	5.9	34.7
	650	7	1.0	1.8	36.5
	700	20	3.0	5.1	41.6
	725	1	.1	.3	41.9
	740	1	.1	.3	42.2
	750	12	1.8	3.1	45.2
	780	2	.3	.5	45.8
	800	17	2.5	4.4	50.1
	825	1	.1	.3	50.4
	840	1	.1	.3	50.6
	850	4	.6	1.0	51.7
	900	14	2.1	3.6	55.3
	950	6	.9	1.5	56.8
	980	1	.1	.3	57.1
	1000	40	6.0	10.3	67.4
	1100	9	1.3	2.3	69.7
	1150	1	.1	.3	69.9
	1200	22	3.3	5.7	75.6
	1250	6	.9	1.5	77.1
	1275	1	.1	.3	77.4

D7 No of Rxs Dispensed per Week

1300	6	.9	1.5	78.9
1400	14	2.1	3.6	82.5
1450	1	.1	.3	82.8
1500	17	2.5	4.4	87.1
1550	2	.3	.5	87.7
1600	2	.3	.5	88.2
1650	1	.1	.3	88.4
1700	7	1.0	1.8	90.2
1750	1	.1	.3	90.5
1800	7	1.0	1.8	92.3
2000	11	1.6	2.8	95.1
2100	1	.1	.3	95.4
2200	1	.1	.3	95.6
2300	1	.1	.3	95.9
2400	2	.3	.5	96.4
2500	8	1.2	2.1	98.5
2560	1	.1	.3	98.7
2800	1	.1	.3	99.0
3000	1	.1	.3	99.2
5600	1	.1	.3	99.5
8000	1	.1	.3	99.7
9006	1	.1	.3	100.0
.	279	41.8	MISSING	
TOTAL	668	100.0	100.0	

Mean	991.147	Std Dev	804.396	Minimum	30.000
Maximum	9006.000				

Valid Cases 389 Missing Cases 279

D8 Percent Covered by ODB Plan

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	3	.4	.8	.8
	2	1	.1	.3	1.1
	10	4	.6	1.1	2.1
	12	1	.1	.3	2.4
	15	6	.9	1.6	3.9
	18	1	.1	.3	4.2
	20	17	2.5	4.5	8.7
	23	2	.3	.5	9.2
	25	14	2.1	3.7	12.9
	27	1	.1	.3	13.2
	28	2	.3	.5	13.7
	30	24	3.6	6.3	20.0
	32	2	.3	.5	20.5
	33	1	.1	.3	20.8
	34	1	.1	.3	21.1
	35	17	2.5	4.5	25.5
	37	1	.1	.3	25.8
	38	1	.1	.3	26.1
	40	61	9.1	16.1	42.1
	42	4	.6	1.1	43.2
	43	2	.3	.5	43.7
	44	1	.1	.3	43.9
	45	16	2.4	4.2	48.2
	47	1	.1	.3	48.4
	48	3	.4	.8	49.2
	49	1	.1	.3	49.5
	50	48	7.2	12.6	62.1
	52	3	.4	.8	62.9
	53	1	.1	.3	63.2
	55	11	1.6	2.9	66.1
	57	1	.1	.3	66.3
	60	54	8.1	14.2	80.5
	62	1	.1	.3	80.8
	65	9	1.3	2.4	83.2
	66	3	.4	.8	83.9
	67	1	.1	.3	84.2
	68	2	.3	.5	84.7
	69	1	.1	.3	85.0
	70	23	3.4	6.1	91.1
	75	16	2.4	4.2	95.3
	80	10	1.5	2.6	97.9
	85	3	.4	.8	98.7
	90	4	.6	1.1	99.7
	95	1	.1	.3	100.0
	.	288	43.1	MISSING	
	TOTAL	668	100.0	100.0	

Mean 47.758 Std Dev 18.032 Minimum .000
Maximum 95.000

Valid Cases 380 Missing Cases 288

D9A Manual Patient Profile System

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	1	324	48.5	85.5	85.5
Yes	2	55	8.2	14.5	100.0
	.	289	43.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.145 Std Dev .353 Minimum 1.000
Maximum 2.000

Valid Cases 379 Missing Cases 289

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D9B Computerized Patient Profile System

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	1	32	4.8	7.7	7.7
Yes	2	382	57.2	92.3	100.0
	.	254	38.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.923 Std Dev .267 Minimum 1.000
Maximum 2.000

Valid Cases 414 Missing Cases 254

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D9C Private Consultation Area

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	1	279	41.8	71.5	71.5
Yes	2	111	16.6	28.5	100.0
	.	278	41.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.285 Std Dev .452 Minimum 1.000
Maximum 2.000

Valid Cases 390 Missing Cases 278

D9D Display Health Information

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	1	52	7.8	13.0	13.0
Yes	2	349	52.2	87.0	100.0
	.	267	40.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.870 Std Dev .336 Minimum 1.000
Maximum 2.000

Valid Cases 401 Missing Cases 267

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D9E Public AV Information

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No	1	342	51.2	88.1	88.1
Yes	2	46	6.9	11.9	100.0
	.	280	41.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.119 Std Dev .324 Minimum 1.000
Maximum 2.000

Valid Cases 388 Missing Cases 280

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D10 Section of OCP Register

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Owner (Section I)	1	109	16.3	16.9	16.9
Manager (Section I)	2	219	32.8	34.0	50.9
Employee (Section II	3	317	47.5	49.1	100.0
	.	23	3.4	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.322 Std Dev .747 Minimum 1.000
Maximum 3.000

Valid Cases 645 Missing Cases 23

D11 Where Undergrad Training

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Ontario	1	484	72.5	73.0	73.0
Elsewhere in Canada	2	100	15.0	15.1	88.1
Other	3	79	11.8	11.9	100.0
	.	5	.7	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.389 Std Dev .690 Minimum 1.000
Maximum 3.000

Valid Cases 663 Missing Cases 5

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D12A B.Sc.Phm.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Item Circled	1	579	86.7	100.0	100.0
	.	89	13.3	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.000 Std Dev .000 Minimum 1.000
Maximum 1.000

Valid Cases 579 Missing Cases 89

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D12B Phm.B.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Item Circled	1	77	11.5	100.0	100.0
	.	591	88.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.000 Std Dev .000 Minimum 1.000
Maximum 1.000

Valid Cases 77 Missing Cases 591

D12C Master of Pharmacy

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Item Circled	1	20	3.0	100.0	100.0
	.	648	97.0	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.000 Std Dev .000 Minimum 1.000
Maximum 1.000

Valid Cases 20 Missing Cases 648

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D12D Pharm. D.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Item Circled	1	8	1.2	100.0	100.0
	.	660	98.8	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.000 Std Dev .000 Minimum 1.000
Maximum 1.000

Valid Cases 8 Missing Cases 660

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D13 When Licensed

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Before 1970	1	207	31.0	31.3	31.3
1970 - 1980	2	245	36.7	37.0	68.3
After 1980	3	210	31.4	31.7	100.0
	.	6	.9	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.005 Std Dev .794 Minimum 1.000
Maximum 3.000

Valid Cases 662 Missing Cases 6

D14 Sex

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Female	1	346	51.8	52.1	52.1
Male	2	318	47.6	47.9	100.0
	.	4	.6	MISSING	
	TOTAL	668	100.0	100.0	

Mean 1.479 Std Dev .500 Minimum 1.000
Maximum 2.000

Valid Cases 664 Missing Cases 4

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D15 Age

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Under 30	1	102	15.3	15.5	15.5
30 - 39	2	245	36.7	37.2	52.7
40 - 49	3	141	21.1	21.4	74.2
50 - 64	4	132	19.8	20.1	94.2
Over 65	5	38	5.7	5.8	100.0
	.	10	1.5	MISSING	
	TOTAL	668	100.0	100.0	

Mean 2.634 Std Dev 1.137 Minimum 1.000
Maximum 5.000

Valid Cases 658 Missing Cases 10

APPENDIX C

CROSS-TABULATED TABLES

TABLE C4.1 PERCENTAGE OF TIME SPENT ON VARIOUS ACTIVITIES BY YEAR LICENSED

Activity	Year Licensed: Before 1970	1970-1980	After 1980	F Ratio	N*
Dispensing	54.2%	50.0%	48.9%	3.0*	556
Business activities	12.0%	15.2%	10.7%	3.4*	437
Counselling patients on drug therapy	11.0%	10.8%	10.9%	0.0	510
Selling nonprescription drugs	10.0%	9.5%	9.7%	0.2	429
Consulting with other professionals	5.4%	8.9%	11.7%	14.7**	516
Continuing education	5.6%	6.3%	7.4%	4.2*	523
Third party plan administration	5.2%	4.7%	3.1%	2.2	324
Prescription record keeping	3.9%	4.4%	3.4%	1.4	346

* N for each variable may not be 668 due to differences in item nonresponse.

** $.01 < p \leq .05$.

*** $p \leq .01$.

TABLE C4.2 NUMBER OF TIMES PER WEEK PERFORM ACTIVITY BY YEAR LICENSED

Activity	Year Licensed: Before 1970	1970-1980	After 1980	F Ratio	N*
General counselling to patient	54.3	51.8	47.5	0.2	501
Make non-Rx recommendations to patient	33.5	42.6	32.0	1.0	457
Contact prescriber re specific Rx	7.9	10.8	11.0	2.7	557
Make therapeutic recommendations to prescriber	3.4	4.7	6.8	5.9**	507
General counselling to prescriber	4.7	4.0	3.9	0.3	463
Contacted by pharmaceutical company representative	4.8	4.4	3.0	6.5**	500
Contacted by prescriber re specific Rx	3.2	3.6	4.0	0.9	498

* N may not be 668 for each variable due to differences in item nonresponse.

** $p \leq .01$.

TABLE C4.3 NUMBER OF TIMES OFFERED SPECIFIC BENEFITS BY PHARMACEUTICAL COMPANY REPRESENTATIVE IN PAST YEAR BY YEAR LICENSED

Benefit	Year Licensed			F Ratio	N[a]
	Before 1970	1970-1980	After 1980		
Drug samples	11.5	4.2	4.9	0.8	407
Free goods or rebates	4.4	4.6	4.4	0.0	370
Free meals	1.1	2.5	3.3	5.0**	387
Gifts or bonuses	0.8	0.9	1.0	0.2	327
Conference fees	0.2	0.2	0.3	1.4	297
Travel expenses	0.0	0.1	0.2	1.7	290
Computer equipment	0.1	0.1	0.2	1.6	285

[a] N may not be 668 due to variation in item nonresponse.

** $p \leq .01$.

TABLE C4.4 PERCENTAGE APPROVING[a] GREATER RESPONSIBILITY IN VARIOUS AREAS BY YEAR LICENSED

Area	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[b]
Counselling and educating patients about drugs	90.5%	97.1%	95.7%	17.3**	652
Monitoring drug treatments	54.4%	80.8%	89.8%	89.5**	639
Health promotion and lifestyle counselling	61.6%	67.1%	65.6%	4.3	647
Counselling, educating prescribers about drugs	43.7%	64.7%	78.0%	68.8**	649
Therapeutic decision-making	40.3%	61.2%	70.9%	48.6**	649
Counselling patients and prescribers about nondrug alternative therapies	43.2%	50.8%	57.4%	19.5**	650
Home visits	19.3%	34.7%	32.5%	37.0**	645

[a] The original five point scale was recoded into a three point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve.

[b] N for each variable may not be 668 due to differences in item nonresponse.

** $p \leq .01$.

TABLE C4.5 PERCENTAGE OF TIME PER WEEK SPENT ON VARIOUS ACTIVITIES BY PHARMACY SETTING

Activity	Pharmacy Setting		F Ratio	N*
	Community	Hospital		
Dispensing	55.3%	42.5%	24.0**	554
Business activities	10.9%	17.1%	7.2**	436
Counselling patients on drug therapy	11.7%	7.8%	12.5**	507
Selling nonprescription drugs	11.0%	1.5%	47.6**	428
Consulting with other professional	3.8%	15.7%	132.7**	512
Continuing education	4.8%	8.9%	38.8**	517
Third party plan administration	4.5%	1.2%	13.2**	325
Prescription record keeping	3.1%	5.8%	12.5**	346

* N for each variable may not be 668 due to differences in item nonresponse.

** $p \leq .01$.

TABLE C5.1 PERCENT SATISFIED WITH THEIR CURRENT LEVEL OF KNOWLEDGE[A] BY YEAR LICENSED

Area	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[B]
Drug effectiveness	60.3%	69.1%	78.6%	16.3**	653
Equivalency of interchangeables	60.5%	57.0%	57.5%	2.3	656
Abuse of Rx drugs	62.1%	52.9%	55.3%	8.7	653
Drug costs	61.2%	56.6%	51.5%	10.3*	647
Adverse drug effects	40.2%	55.5%	60.2%	19.1**	655
Needs of special groups	50.7%	52.7%	49.5%	3.6	648
Equivalency of therapeutic substitutions	39.9%	47.1%	53.6%	8.5	654
Drug interactions	39.5%	46.1%	53.6%	11.9*	657
Non-drug alternatives	28.8%	31.3%	34.3%	2.5	655

[A] The original five point scale was recoded into a three point scale. The two dissatisfied scores were classified as "dissatisfied" and the two satisfied scores as "satisfied".

[B] N may not be 668 due to variation in item nonresponse.

* $.01 < p \leq .05$.

** $p < .01$.

TABLE C5.2 PERCENT RATING SOURCES OF INFORMATION AS IMPORTANT[a] BY YEAR LICENSED

Source	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[b]
Journal articles	72.5%	79.2%	91.4%	32.6**	661
CPS	88.3%	82.4%	72.7%	17.8**	660
Drug Info Centres	68.0%	81.2%	82.7%	24.5**	656
Continuing education courses	69.6%	65.7%	70.2%	4.6	657
Consultations with pharmacists and prescribers	40.4%	48.6%	65.4%	26.9**	656
Meetings, conferences, seminars	51.0%	50.6%	52.4%	4.4	653
OCP prescribed library	37.6%	46.0%	48.0%	7.5	638
Audio/Video cassettes	38.1%	28.8%	20.8%	21.0**	649
Pharmaceutical company representatives	31.8%	22.6%	22.0%	7.0	653
Ads/Promotional material	18.0%	17.6%	16.3%	1.2	658

[a] The original five point scale was recoded into a three-point scale. The two scores on the not important side of the continuum were coded "not important" and the two on the important side were coded "very important".

[b] N may not be 668 due to variation in item nonresponse.

** $p \leq .01$

TABLE C5.3 PERCENT RATING SPECIFIC FACTORS AS PROBLEM AFFECTING ABILITY TO KEEP PROFESSIONAL KNOWLEDGE BY YEAR LICENSED[a]

Factor	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[b]
Lack of time	43.6%	59.3%	53.6%	23.6**	656
Inability to critically assess information	25.4%	18.5%	10.5%	30.7**	653
Inadequate sources of information	18.2%	20.2%	15.3%	3.0	655
Introduction of new drugs	12.3%	18.6%	15.3%	4.5	654
Introduction of interchangeables	12.3%	12.9%	8.7%	7.3	650
Distrust of available information	8.3%	10.3%	7.7%	7.8	655

[a] The original five-point scale was recoded into a three-point scale: the two scores on the "not a problem" side of the continuum were coded "not a problem" and the two on the "problem" side were coded a "serious problem."

[b] N may not be 668 due to variation in item nonresponse.

** $p \leq .01$.

TABLE C6.1 PERCENT AGREEING WITH STATEMENTS ABOUT ROLE OF DISPENSARY ASSISTANTS (DAs) BY YEAR LICENSED[a]

Statement	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[b]
DAs should wear tags identifying themselves	79.7%	88.1%	89.9%	13.9**	654
DAs should be permitted to received written Rxs from patients	75.9%	74.7%	73.5%	4.8	644
DAs should be able to give patients Rxs not requiring counselling	76.4%	65.8%	66.8%	8.0	644
DAs should have at least community college training	47.3%	54.5%	64.1%	22.7**	654
DAs should be permitted to provide info to customers on nonprescription drugs	18.6%	11.6%	5.3%	23.4**	648

[a] The original five-point scale was recoded into a three-point scale: The two disagree scores were classified as "disagree" and the two agree scores as "agree."

[b] N may not be 668 due to variation in item nonresponse.

** $p \leq .01$.

TABLE C6.2 PERCENT OF PHARMACISTS APPROVING[a] VARIOUS STATEMENTS ABOUT PROFESSIONAL FEES BY YEAR LICENSED

Statement	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[b]
ODB fees should be lower for cash	11.0%	7.2%	10.1%	4.6	634
Fees for renewals should be lower than for new prescriptions	10.4%	13.5%	16.7%	8.1	641
Fees should be linked to the cost of drugs	33.8%	31.4%	26.7%	4.1	639
ODB fees should be lower for OTC drugs	27.0%	23.5%	16.0%	17.4**	638
Hospitals should receive same fee as retail outlets for dispensing outpatient Rxs	60.7%	64.6%	72.7%	12.1*	614
ODB should remunerate pharmacists for home visits	62.9%	73.5%	69.5%	12.4	628
Mandatory posting of fees for interchangeables	52.0%	56.7%	58.2%	2.6	639
Mandatory listing on receipt of drug cost and fee	44.6%	55.5%	46.0%	7.0	640
Mandatory listing on ODB receipts of drug cost and fee	43.1%	48.1%	40.5%	4.8	639
Mandatory listing on receipts to customers with third party coverage of fee and drug cost	46.0%	53.8%	42.0%	9.1	638

[a] The original five-point scale was recoded into a three-point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve".

[b] N may not be 668 due to variations in item nonresponse.

* p .01 < p < .05.

** $p \leq .01$.

TABLE C6.3 PERCENT AGREEING[a] WITH STATEMENTS ABOUT ODB CO-PAYMENTS AND CONFLICT OF INTEREST BY YEAR LICENSED

Statement	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[b]
ODP Co-payment					
Nominal fixed co-payment for each Rx	49.2%	55.2%	50.8%	13.4**	637
Co-payment as a percentage of Rx costs	37.7%	39.3%	40.7%	10.6*	637
Annual patient co-payment	27.8%	29.8%	31.2%	13.0*	635
ODB taxable	25.0%	14.8%	23.0%	18.4**	629
Conflict of Interest and Pharmaceutical Companies					
Should OCP set guidelines re conflict of interest	60.5%	54.9%	48.6%	7.0	657
Is it a potential conflict to accept benefits	60.6%	51.6%	38.3%	23.5**	656

[a] The original five-point scale was recoded into a three-point scale: The two disagree scores were classified as "disagree" and the two agree scores as "agree."

[b] N may not be 668 for each variable due to differences in item nonresponse.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C6.4 PERCENT RATING FACTORS AS IMPORTANT INFLUENCES ON INCREASED DRUG COSTS BY YEAR LICENSED[A]

Factor	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[B]
Aging population	83.4%	78.2%	82.6%	2.4	655
Availability of new more effective drugs	73.8%	71.6%	69.4%	1.5	655
Too little emphasis on preventive care	67.3%	62.7%	57.5%	6.8	653
Increasing enrolment in drug plans	65.7%	63.0%	57.1%	5.5	652
Lack of personal responsibility for health	54.7%	59.1%	43.7%	13.11*	651
Drug company profits	41.2%	42.7%	40.2%	2.0	647
Lack of info on nondrug therapies	34.0%	37.1%	32.4%	7.5	647
Bioengineered drugs	23.0%	38.6%	34.5%	14.5**	620
Pharmacists' fees	8.9%	8.2%	2.4%	10.3*	651

[A] The original five point scale was recoded into a three point scale: the two scores on the not important side of the continuum were coded "not important" and the two on the important side were coded "very important".

[B] N may not be 668 due to variation in item nonresponse.

* $0.1 < p \leq .05$.

** $.01 \leq .01$.

TABLE C7.1 PERCENT APPROVING OF STRATEGIES FOR PHARMACISTS BY YEAR LICENSED[a]

Before Strategy	Year Licensed: 1970-1970	After 1980	Chi 1980	Square	N[b]
Required to report double doctoring and drug abuse	69.1%	76.2%	78.2%	7.8	654
Central computer system for recording and linking info about prescribing, dispensing and utilization	59.7%	65.8%	66.7%	5.0	651
Substitution of lower cost interchangeables if "no- sub" order absent	53.4%	64.5%	57.5%	16.6**	653
Required to inform patient when using substitute drug	46.6%	47.3%	50.7%	3.5	654
Printed info on use and side effects with each Rx	37.6%	48.6%	44.0%	7.8	657
Fixed annual dispensing fee	5.9%	6.1%	3.4%	4.0	653

[a] The original five point scale was recoded into a three point scale: the two disagree scores were classified as "disagree" and the two agree scores as "agree".

[b] N may not be 668 due to variance in item nonresponse.

** $p \leq .01$.

TABLE C7.2 PERCENT APPROVING OF STRATEGIES FOR DRUG MANUFACTURERS[A]

Strategy	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[B]
Ads to include side effects, contraindications and costs	82.3%	84.8%	81.3%	9.0	655
License new drugs only if significant improvement over available drugs	71.9%	67.8%	64.9%	5.8	656
Register all benefits over $100 provided by drug companies	61.4%	51.0%	44.9%	18.7**	652
Limit products covered by drug benefit plans	47.0%	46.9%	46.6%	2.2	645
Eliminate drug samples	49.2%	47.3%	34.5%	11.5*	648
Patent protection limited to two years	20.8%	14.5%	11.1%	10.3*	652

[A] The original five-point scale was recoded into a three-point scale: The two disapprove scores were classified as "disapprove" and the two approve scores as "approve."

[B] N may not be 668 due to variation in item nonresponse.

* $.01 < p \leq .05$

** $p \leq .01$.

TABLE C7.3 PERCENT APPROVING OF STRATEGIES FOR PHYSICIANS BY YEAR LICENSED[A]

Strategy	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[B]
Accredited continuing education on drugs and prescribing	80.8%	86.0%	91.3%	11.5*	646
Professional review of prescribing patterns	72.1%	71.6%	84.3%	13.9**	644
Hospital review of prescribing patterns	66.5%	68.7%	79.3%	9.4*	617
Require MDs ID on all Rxs	63.3%	66.8%	73.7%	7.6*	642
Random audits of MDs practices	55.4%	63.5%	68.4%	9.7*	642

[A] The original five-point scale was recoded into a three-point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve".

[B] N may not be 668 due to variations in item on nonresponse.

* p .01 < $p \leq$ .05.

** $p \leq$ .01.

TABLE C7.4 PERCENT APPROVING OF STRATEGIES FOR PATIENTS BY YEAR LICENSED[A]

Strategy	Year Licensed: Before 1970	1970-1980	After 1980	Chi Square	N[B]
Drug education program for all high school students	82.0%	86.1%	79.9%	5.5	659
"Smart card" for all patients	76.1%	81.5%	84.3%	5.1	658
Limit number of drugs insured by ODB	58.9%	66.3%	61.4%	13.2**	652
Eliminate OTC drugs from ODB	62.6%	51.2%	44.0%	20.4**	657
Expand ODB to cover all Ontario residents	8.7%	15.3%	9.2%	14.0**	655

[A] The original five-point scale was recoded into a three-point scale: the two disapprove scores were classified as "disapprove" and the two approve scores as "approve".

[B] N may not be 668 due to variations in item on nonresponse.

** $p \leq .01$.

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GETTING IT RIGHT:
AN EVALUATION OF ALTERNATIVE SYSTEMS OF THE ORGANIZATION ON THE ONTARIO PRESCRIPTION DRUGS DISTRIBUTION SYSTEM

by

Paul K. Gorecki
Economic Council of Canada

January 11, 1990

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Paul K. Gorecki

January 10, 1990

Ottawa

1 INTRODUCTION

THE ISSUES

The Ontario provincial government is concerned about the cost and benefits of the Ontario Drug Benefit (ODB) programme, which, since the mid-1970s, has provided prescription and some over-the-counter (OTC) drugs free to senior citizens, those on social assistance and a number of other, smaller, groups. These costs have risen substantially, totalling $542.1 million in 1987/88.[1] When combined with the drug costs in public hospitals in 1987/88 the Ontario government expenditures were about $0.76 billion.[2] Not only is this a large absolute amount, but the ODB is amongst the fastest growing provincial government health Programmes.[3]

The future seems to hold out little prospect that drug expenditures, either in general or under the ODB, will fall. On the demand side, the heaviest users of drugs, those over 65 years of age, are expected to increase substantially in number in the decade 1986/96: from 10.9 per cent of the province's population or 993,000 to 13.2 per cent of the province's population or 1,318,000.[4] On the supply side, there is a concern over the "high" price of new drugs, especially in view of the abolition of compulsory patent licensing of drugs in 1987 by the federal government[5] and the increasingly oligopolistic nature of the industry[6]. Furthermore, the federal share of Ontario's health and post-secondary education expenditure has fallen by over

10 percentage points during the past decade: from a couple of percentage points above 50 per cent in 1979/1980, to a percentage point or so below 40 per cent in 1988/89.[7] In other words, Ontario is now spending 60¢ on the dollar rather than 50¢.

The concern over the benefits yielded by the ODB reflects part of a much wider anxiety that the consumption of drugs is too high, in that inappropriate as well as ineffective drugs are being prescribed, with the possibility that dangerous combinations are being taken by patients. In Ontario this was highlighted by the release of a 1987 literature review on drug utilization[8] and the resignation, in January 1988, of the Chairman of the government appointed committee that examined drug quality and related issues on the grounds of, "a continuing sense of frustration and dissatisfaction with a process which limits the effectiveness of the ... [committee] in issues such as the pattern of drug utilization, the effectiveness of drug use and the spiralling costs of medications."[9]

The cost and benefit issues are not, of course, unrelated. Indeed, they are probably complementary. If the concerns that Ontarians are indeed consuming too many and/or too expensive drugs is correct, then appropriate measures to correct this situation should lead to a reduced demand for drugs. The trick, of course, is to ensure that the incentives and measures introduced with

respect to the cost and benefit issues are mutually reinforcing, rather than offsetting or working at cross-purposes.

The Government of Ontario created the Pharmaceutical Inquiry of Ontario, under the chairmanship of Dr. Frederick Lowy, in March 1988, to investigate the cost and benefit issues. The inquiry, which has a wide-ranging Terms of Reference (reproduced in Appendix A) has already issued a series of interim reports. (Pharmaceutical Inquiry of Ontario, 1988a, 1988b, 1989). In the news release that accompanied the announcement of the inquiry, it was stated that not only would the effects of the major legislative changes of 1986, relating to the Ontario drug market, be reviewed, but also that the issue of drug waste and misuse of medications be addressed. (Ontario, Ministry of Health, 1988a). It is to the former set of issues that this background study for the Lowy Inquiry is largely aimed at addressing.

THE SOLUTIONS

Expenditures under the Ontario Drug Benefit program are the product of demand and supply side factors. On the demand side these include:

- the underlying health of the eligible population;
- the size and age structure of the eligible population;

- the proportion of the eligible ODB population that are program recipients or beneficiaries;
- the fact that an ODB recipient receives drugs free of charge; and
- the attitude of physicians and patients as to whether, at the end of a consultation, a prescription is the expected outcome.

Supply side factors include:

- the increase in the number of physicians;
- the supply of drugs;
- the price of drugs; and
- the fee charged by the pharmacy to the ODB for dispensing a prescription.

Thus, expenditures under the ODB can increase for a wide variety of reasons.

Numerous solutions have been suggested for reducing provincial government drug expenditures acting on both the supply and demand side of the equation. These include:

- drug utilization reviews designed to ensure better pharmacotherapeutic care and more cost-effective practice;
- monitoring and eliminating patient/consumer abuse of ODB;
- a reduction in the eligible population under the ODB;

- restricting drug benefits only to life threatening situations;
- promoting -- by mandating -- the dispensing of the lower priced generic brands;
- patient/consumer co-payment on either the dispensing fee or the total price of a prescription;
- only paying for drugs where the evidence suggests that the benefits substantially outweigh the costs;
- for high priced, high volume single source drugs allowing carefully screened firms to import such drugs from the U.S., U.K. and/or France;
- educate physicians to be more sensitive to the costs of alternative drug therapies;
- change the method by which pharmacists are compensated for their dispensing and professional services to a more market based system or to a completely different concept, such as capitation;
- that all drug paid for under the ODB be treated as taxable benefits;
- pricing drugs for reimbursement under ODB on an Actual Acquisition Cost (AAC) basis rather than the current Best Available Price (BAP); and
- change the emphasis in the role of the pharmacist more toward patient-orientated services to ensure cost-effective use of medications.

In some cases, of course, such measures merely shift the cost of the drug program from the public to the private sector, with no overall reduction in society's funding of drugs. Indeed, total expenditures may go up if the government has been particularly effective at restraining some element of cost which the private sector is not able to replicate as well.

The relevance of these solutions depends upon to a considerable extent the determinants of provincial drug expenditure and how amenable policy is to influencing such determinants. Total expenditure under the ODB may be written as

$$TE = q \cdot p \qquad (1.1)$$

where TE = total expenditure

q = quantity, measured as the total number of claims, and

p = price, measured as the average cost per claim.

Furthermore, p can be broken down into two components, the dispensing fee and drug cost. Substituting into 1.1 yields,

$$TE = q \cdot (dc + df) \qquad (1.2)$$

where dc = drug cost, per claim, and

df = dispensing fee, per claim

Thus, total expenditure can rise because any of the three arguments in 1.2 increase.

In Table 1-1, the components of equation 1.2 are presented for the period 1979/80 to 1987/88, during which time there were no major changes in the criteria for determining the eligible population. The data is presented in index form, with 1979/80 set equal to 100 for each of the three components of equation 1.2. Since the dollar figures for drug cost and dispensing fee are in nominal dollars, the Consumer Price Index is also included. The real or inflation adjusted increase in drug cost or dispensing fee is estimated by deflating the nominal figures by the Consumer Price Index. It is this adjusted number that has to be compared with quantity in evaluating changes in q, dc and df in equation 1.2.

Over the period 1979/80 to 1987/88 claims or quantity was the fastest growing item. It virtually doubled. A claim is a separate billing to the ODB by a pharmacist for dispensing a drug to a patient/consumer. It thus consists of the dispensing fee and the drug cost. It is not necessarily synonymous with the number of prescriptions. The number of claims is likely to be larger because for much of the history of the ODB a pharmacist could (and did) make a separate claim for each month's supply of a drug. Thus, if a prescription was for a 90 days supply, this could result in three claims. In real terms then, the most important

factor causing total ODB expenditure to increase was number of claims or quantity.

Over the period 1979/80 to 1987/88, the second fastest growing item was the drug cost, which increased, in real terms, by more than half. One of the reasons that it is claimed drug costs have increased is because the newer drugs coming on to the market are at higher introductory or entry level prices.[10] As one group has commented:[11]

> Examples of just a few are: the drug AZT, used in the treatment of AIDS at approximately $1,000 per month per patient; Tegison at $72.00 per 36 tablets; Corderone [sic] at $150.00 per 100 tablets and Pepcid at $137.00 per 100 tablets. Prior to these recent developments in Canada, we had never seen a prescription drug with an introductory price in excess of $1.00 per tablet. (Canadian Drug Manufacturers Association, 1988, p. 4).

In a much more sophisticated excercise in New Zealand, Sutton (1988) found that entry level prices were substantially above the average cost of all medicines. There is some indirect evidence to support this for Ontario. The average drug cost per ODB claim for single source products -- which would tend to be heavily weighted by newer drugs -- increased from $6.33 in 1979/80 to $18.96 in 1987/88. The corresponding costs for multiple source drug products -- which would tend to be heavily weighted by older products -- increased from $3.32 to $5.10, respectively.[12] Of

course, if the benefits are commensurate with these increased prices this is not necessarily an adverse development.

Finally, the dispensing fee barely increased in real terms, rising only slightly ahead of inflation. For several years, the fee actually lagged inflation. However, it should be noted that for high volume multiple source drugs the actual price paid by the pharmacist was frequently below the price at which the pharmacist was reimbursed by the government. This difference, the price spread, accrued to the pharmacist. If this difference were reassigned and included as part of the dispensing fee, then the fee increases would not seem quite as low. Unfortunately, accurate data does not exist to readjust the fee for 1979/80 to 1987/88. However, as we shall see in Chapter 2, the price spread has been substantial.

Quantity in equation 1.2 can be broken down in the following way:

$$q = \alpha \cdot Z\bar{q} \qquad (1.3)$$

where α = the proportion of the ODB eligible population for which at least one claim was made,

Z = the size of the eligible population,

$\bar{q}$ = average number of claims per recipient,

and α will vary between 0 and 1. Thus, q can increase either because more of those eligible for ODB benefits claim them, the eligible population increases or the demand by beneficiaries has risen.

The ODB divides its eligible population into various plan types, depending upon a number of factors, including: the criteria used to select the group (e.g., age, income level); the length of time the benefits last (e.g., year, month); and the setting in which the drug is dispensed (e.g., pharmacy, institution). In some instances there is reliable data on the eligible and beneficiary population in the plan (e.g., senior citizens), in others only the beneficiary not the eligible population (family benefits),[13] while in others the two would appear to be the same.[14] It should also be noted that a person may qualify for benefits under more than one plan. For example, a person may be over 65 years of age and in institutional care. Thus, the total eligible population for all plan types may involve some double counting. With these caveats in mind attention can now be turned to examining the determinants of q.

Table 1-2 presents, in the last column, all the arguments of equation 1.3 for all the ODB plans taken together. This shows that α, Z and $\bar{q}$ are all gradually increasing, particularly Z and $\bar{q}$. Over the period 1981/82 to 1988/89, the eligible population increased by 29 per cent, but the beneficiary population increased

even more, so that α increased from 0.89 to 0.96. In terms of future expenditure growth with α so close to unity claims volume increases will be due to a rise in the eligible population, its composition and the number of claims per beneficiary.

Table 1-2 also breaks down α and Z, but not $\bar{q}$, by plan type under the ODB. The most important group by far is seniors, accounting for 64.5 per cent of the ODB eligible population in 1988/89. Although, not shown, seniors accounted in 1987/88 for approximately 80 per cent of ODB drug benefit expenditures.[15] The α and Z of this group has increased, the former substantially, from 0.88 to 0.94, in the period 1981/82 to 1988/89. One reason for the increase in α is that the age structure of Ontario's population is changing such that those over 65 are becoming, on average, older (Table 1-3) and, the older you are, the more prescriptions you are likely to consume, as data in Table 1-4 for Saskatchewan clearly indicates[16] -- such data is unfortunately not readily available for Ontario. Hence, given these facts, ODB expenditures is likely to rise substantially in the next 10 to 20 years under the present set of policies.

These results suggest solutions where important cost savings may be made should be those with respect to eligibility; the factors behind the increased utilization or demand; the rise in drug prices particularly single source; and perhaps the dispensing fee. However, in deciding which solutions are most appropriate we need

rules or criteria for selecting or choosing between the large number suggested above. It is to this topic we now turn.

THE APPROACH

In discussing and evaluating the solutions to the problem of rising ODB expenditures reference will be made to six broad underlying criteria, principles or concepts: access; economic efficiency; program administration; value for money; appropriate role for patient/consumer; and "right" balance between the various roles of the Ministry of Health. Access reflects notions of "justice", "fairness" and "legitimacy". Economic efficiency is concerned with ensuring that scarce resources are used or allocated in their most economical manner; waste and excess capacity should be discouraged, not encouraged. The program administration criterion is concerned that there should be a case for government intervention, that the procedures and processes to implement the policy are readily understood and that program objectives are well specified.

Value for money means ensuring that the drugs and professional services supplied provide benefits commensurate with their cost. The recipient of the ODB program could either be viewed as a passive, non-expert, patient with little role to play in the drug delivery system, beyond receiving and taking medication, or as a knowledgeable consumer, with an important role to play in the

system. Striking the "right" balance between these roles is important in considering and evaluating alternative solutions. Finally, in considering any cost control solution for the ODB, the impact on the private sector should be specified. The Ministry of Health has a number of roles including setting market-wide rules for the retail drug market and as a payor of ODB. These different roles may conflict. In considering solutions the appropriate balance should be maintained. The discussion of these six criteria is general; specifics are left to the next three chapters.

Access

Of the six principles access is probably the one that commands common acceptance across a wide cross-section of society. Access is part of a wider concept of equity. Public policies are frequently justified on grounds of equity. If a policy is felt to be inequitable, unjust, unfair and/or not in accordance with generally accepted notions of what is "right" and "proper", it is unlikely to command either legitimacy or funding for long.

A mark of a humane society is often felt that those who -- for whatever reason -- have health problems should not suffer adverse consequents -- illness -- because of lack of access to drugs. Those least able to survive because of financial problems of accessibility should be cared for by the rest of society. Thus

this criteria -- access or societal fairness -- implies that those residents of Ontario who do not command sufficient income to purchase drugs, where in the opinion of a qualified medical practitioner these are warranted, should have them provided from the public purse.

Securing access for all residents of Ontario is a key overall objective of governmental health policy. In a recently released discussion paper on the future of health care in Ontario, the Minister of Health stated,

> To better meet our needs, we have to make changes in the way health care services are delivered and funded. A key principle of Canadian health care - reasonable access of quality care for everyone - must and will remain intact. Health care must and will be provided to Ontario residents regardless of their ability to pay. (Ontario, Ministry of Health, 1989b, p. 1).

A similar statement appears as one of the five goals of the Premier's Council on Health Strategies: "provide accessible, affordable, appropriate health services for all". (Ontario, Premier's Council on Health Strategies, 1989, n.p.).

Economic Efficiency

Economic efficiency refers to the fact that resources are scarce, that there are numerous demands on their use from building new hospitals to airports, and that these demands cannot all be

met simultaneously. Thus it becomes important to ensure that resources are allocated in an optimum fashion -- that is to say in such a way that they cannot be reorganised to provide (say) an extra hospital while leaving total output unchanged.

Optimum resource allocation, to simplify considerably, requires that, at the margin, the cost of an extra unit of production -- whether a good or service -- is equal to the price of the unit. In other words, price does not exceed cost. Furthermore, implicit in this is that the resources used in production of the good or service are being done so in as least cost manner as possible. In the case of the health care system overall this would mean that all the various parts of the system, from hospitals to pharmacists, are organised in such a way that the desired level of health care is delivered in the least cost manner. This requires careful attention to be paid to the interconnections between the various parts of the health care system, so as to ensure that each is aware and takes into account the cost and benefits it is imposing on other parts of the system.

For resources to be allocated efficiently -- both at a point in time and overtime -- requires they should be able to flow from one use to another and mechanisms should be in place to ensure that within any market prices and costs are equated at the margin. In other words, if one form of drug distribution or size of pharmacy is more efficient at providing a given level of professional

services, it should be allowed to expand and others contract, either in relative or absolute terms. Clearly, in some parts of the health care system such reallocation can be achieved more quickly than in others.

Program Administration

Government intervention should be based on a well documented case for the need for such intervention. Furthermore, while this is a necessary condition, it is not a sufficient condition. There are costs to government intervention -- thus what is being compared is two imperfect models -- the status quo and government intervention (Wolf, 1988). A sufficient condition is that the government intervention is not accompanied by costs that are offset of the benefits. In other words, the cure must not be worst than the disease.

Once government has intervened the institutional and legal framework should have a number of characteristics. The policy objectives should be well specified and understood. This makes both policy evaluation and administration easier. The policy implementation should be conducted with the maximum of transparency so that persons affected can feel that the rules are being applied in an equitable manner and deviations from program or policy objectives should be minimised.

The administration of the policy should also be as simple and straightforward as possible. Making, for example, many exceptions or attempting to craft the administration to meet many different and special situations may not only make the administration cumbersome, less efficient and more costly, but may also make it more difficult for the primary policy goals and objectives to be met.

Value for Money

Government purchases of drugs and the professional and dispensing services of pharmacists under the ODB are meant to improve the health and quality of life for the eligible population. In other words, for every dollar of public (or private) expenditure on drugs and pharmacists services there should be at least a dollars' worth of benefits.[17] Estimating whether such relationships hold is not an easy or straightforward task. The Ontario Ministry of Health has recently become concerned about this issue. The direction the Ministry are going in this respect is as follows:

- Improve and transmit knowledge on treatment outcomes and validation, in order to make better use of resources and ensure quality of care.
- Encourage all health professionals to take an active role in implementing outcome review through the use of technological assessment methodology to evaluate new technology equipment, drugs, and medical procedures. (Ontario, Ministry of Health, 1989b, p. 26).

Therefore, solutions which involve a better appreciation or specification of the services purchased and monitoring of outcomes should, other things being equal, be encouraged.

Role of Patient/Consumer

In considering solutions to the issue of rising ODB expenditures an important issue that conditions the practicality of solutions is the role of the consumer/patient.[18] In a typical well functioning market the consumer is able to judge the relative merits of different brands of toothpaste, makes of automobiles or the quality of service provided by a discount as opposed to full-service broker. Sellers communicate the virtues of their products and services through a variety of media and methods.

In the case of health care, the conventional wisdom is that the consumer does not possess the required knowledge and expertise to operate in a similar manner. A physician intervenes and makes a decision for the patient with respect to diagnosis, treatment and, sometimes, brand of drug. The patient then takes the prescription -- if this is the treatment recommended -- to the pharmacist. This does not preclude, of course, the patient discussing drug therapy and perhaps price with the physician and the pharmacist.

Some solutions to health care cost problems such as a small deterrent fee per visit to the physician implicitly assume that the patient can judge when such a visit is warranted. In other words, the consumer has the required expertise to distinguish between 'essential' and 'inessential' visits. Nevertheless, while it is generally agreed that such deterrent fees do not have a good rationale with respect to physician visits because of patients' lack of knowledge, there is much less agreement that, with respect to the role of the pharmacist, the patient/consumer lacks the ability to play an active role. In other words, the consumer can judge the different quality of service provided. Here at least there are grounds for thinking the beneficiary under ODB can act as consumer rather that a patient. Hence, ensuring the appropriate consumer/patient role is an important criteria in judging various solutions.

Role of Ministry of Health

The Ontario retail drug market in 1990 is the result of successive government intervention since the early 1970s. This intervention has taken two primary forms. By setting certain market-wide rules with respect, for example, to interchangeability, the use of the Formulary, and the provision of information on drug cost and dispensing fee to the consumer, the government has intervened directly to influence drug cost and dispensing fee. The decision in the mid-1970s to establish the

ODB has led to government directly to influence the 40-45 per cent of the market accounted for in the mid 1980s by the ODB population. However, this direct intervention has had an indirect effect or impact on the rest of the retail drug market in Ontario. Any discussion of the performance of the Ontario retail drug market and possible ideas for improvement must consider these differing roles of government.

In sum, six criteria have been suggested in evaluating solutions for dealing with the issue of rising ODB expenditures:

- accessibility;
- economic efficiency;
- program administration;
- value for money;
- appropriate role for patient/consumer; and
- "right" balance between the roles of the Ministry of Health.

The difficulty comes, of course, not so much if all criteria are met, but rather if some are met and others are not. Trade-offs will then have to be made.

THE PLAN

In order to gain an appreciation of the relevance of possible solutions to the issue of rising ODB expenditures it is necessary to understand thoroughly government intervention in the Ontario drug market, its structure and how it has evolved over time. This is the topic of Chapter 2. However, it is more than just a description of the evolution of the ODB. It also attempts to discuss the rationale for government intervention, both in the ODB and in the drug market in general. As such the chapter will also discuss how some of the principles of evaluating various solutions have been regarded in the past.

Chapter 2 also puts the Lowy Inquiry into perspective, since it is one of a series dating back to the early 1970s on various, but not all, aspects on the framework within which drugs are distributed, prescribed, dispensed and priced in Ontario. These earlier inquiries include Porter et al., (1971), Bailey et al., (1978) and, most recently, Gordon (1984). The Terms of Reference for these inquiries, reproduced in Appendix A, have gradually widened. There has also been a commensurate rise in the number of recommendations, also reproduced in Appendix A, from two in Porter et al., (1971) to over twenty in Gordon (1984). Nevertheless, there have been some recurring themes, with respect to drug cost such as the pricing of drugs in the Ontario Drug Benefit Formulary/Comparative Drug Index and the rules and incentives

governing product selection, and the dispensing fee, such as how it should be set.

Many of the ideas and recommendations of the Bailey et al., (1978) and Gordon (1984) reports, with respect to addressing various aspects of dispensing fee and drug cost, were implemented in the 1986 major legislative overhaul of the ODB and the retail drug market in general, with the passage of Bills 54 and 55. Chapter 2 therefore provides a brief description of this legislation. The next two chapters are then spent evaluating how successful this legislative change was and what improvements, such as the solutions mentioned above, could be introduced to better deal with the issue of ODB expenditures.

The evaluation of the 1986 legislative changes and options for the future is divided into two parts: the dispensing fee (Chapter 3) and drug cost (Chapter 4), where the drug cost is defined to include both the acquisition and distribution costs. Table 1-5 indicates the relative importance of these two items. In each chapter the present system is described in some detail, its shortcomings and advantages presented, and alternatives discussed and evaluated. Attention is paid to the ODB and non-ODB market. The message to emerge from these chapters is that there are still a number of problems with the Ontario retail drug market. Some of these are similar to those that have existed for

decades, others are new, created directly as a result of the 1986 changes.

The final chapter of the study provides a brief conclusion.

NOTES TO CHAPTER 1

1 Ontario, Ministry of Health, "Drug Benefit Utilization Report by Plan Type, 1987-88 Fiscal Year Summary Report", 11/07/89. The $542.1 refers to all ODB expenditure.

2 The ODB figure is taken from note 1, the hospital figure from Canadian Drug Manufacturers Association (1988, p. 5) which estimates these at $214 million.

3 Canadian Drug Manufacturers Association (1988, p. 5) Ontario, Ministry of Health (1988b, pp. 2-3).

4 Ontario, Ministry of Health (1988b, p. 17).

5 On this see Gorecki (1987b) and Shulman and Richard (1988). It is too early to judge the effectiveness of the Patent Medicine Prices Review Board's attempts to control drug prices.

6 The consensus seems to be that recent mergers in the drug industry are part of an industry-wide trend. (Blackhurst, 1989; Buchan, 1989, and Economist, 1989). Blackhurst (1989) provides a discussion on one such merger -- SmithKline Beckman of the U.S. and Beecham of the UK -- which is the biggest so far.

7 For details see Nixon (1989, p. 13).

8 The literature review was by Carruthers et. al., (1987).

9 Quoted from a letter dated January 18, 1988, titled "Re: Drug Quality and Therapeutics Committee", from S. G. Carruthers, M.D., FRCRC Chairman, Drug Quality and Therapeutics Committee, to Mrs. Elinor Caplan, Minister of Health. See also McLaren (1988).

10 There are other explanations of course. These include a shift in demand to those therapeutic classes where drug entities are more expensive. At first glance this would not seem to be a tenable explanation, in that in Saskatchewan, for the period 1984 to 1987 there did not seem to be large shifts in prescription volume between pharmacologic-therapeutic categories. (Saskatchewan Health Prescription Drug Plan, 1987, pp. 15-16).

11 All of the drugs cited are listed as benefits in Ontario under ODB except AZT. See Ontario, Ministry of Health (1989c, various pages).

12 Based on data presented in Table 4-3. The fiscal years are approximated by taking the averages of the last and first six months. In other words, the fiscal year ending March 31, 1988 is approximated by the period July 1987 to June 1988.

13 The ODB administers the drug plan for those on General Welfare and Family Benefits on behalf of the Ministry of Community and Social Services, which supplies estimates of the eligible population. In recent years, these have turned out to be quite conservative -- below the actual number of beneficiaries. As a result the eligible population estimate was increased to match the number of beneficiaries.

14 For those in institutional care and home care.

15 Based on Ontario, Ministry of Health, "Drug Benefit Utilization Report by Plan Type, 1987-88 Fiscal Year, Summary Report", 11/07/88, mimeo.

16 The drug cost per prescription does not appear to increase with age, however. Using the same source as Table 1-4:

Age	Drug cost per prescription	Total average drug plan payment per beneficiary
65-74	$12.58	$233.02
75-84	11.31	260.30
85 and over	8.94	245.53
All beneficiaries	11.73	105.65

The drug plan payment does not include the up to $3.95 patient/consumer copayment per prescription. The decline in drug cost per prescription with age may be the result not only of the death of those taking the more expensive medication, but also their hospitalization.

17 At least, because there are costs involved in raising a $1.00 in taxes. (See Tarasofsky, 1984, for a discussion of the estimates).

18 This section was based upon reading Barer, Evans and Stoddart (1979), Evans and Williamson (1978).

Table 1-1

Expenditures Components Under the Ontario Drug Benefit Program, 1979/80 to 1987/88[1]

Year	Quantity (total number of claims)	Drug cost (per claim)	Dispensing fee (per claim)	Consumer price index
1979/80	100.0 [2]	100.0[3]	100.0[4]	100.0
1980/81	108.9	121.1	106.3	110.9
1981/82	116.5	142.1	121.9	124.6
1982/83	129.1	173.7	134.4	136.7
1983/84	139.9	192.1	143.8	143.9
1984/85	151.3	202.6	156.3	149.6
1985/86	163.9	223.7	156.3	155.8
1986/87	179.1	242.1	165.6	162.2
1987/88[5]	193.7	265.8	184.4	169.2

1 Refers only to claims under the ODB with dispensing fees. In 1986/87, claims with fees accounted for approximately 90 per cent of all ODB expenditure. The remaining 10 per cent refers to over the counter drugs as well as flu vaccine and oxygen.
2 In 1979/80 quantity, measured in terms of claims, was 15.8 million.
3 In 1979/80 drug cost per claim was $3.8, in current dollars.
4 In 1979/80 dispensing fee per claim was $3.2, in current dollars.
5 Estimate.

Source Ontario, Ministry of Health (1988b, Appendix 3, n.p.).

Table 1-2

The Ontario Drug Benefit Program Eligible and Beneficiary Population, by Plan Type: 1984/85 - 1988/89

	Eligible persons, by plan type					
	Over 65	Family benefits	General welfare	Home care	Other (institutional care)	All plan types
1981/82						
Number[2]	864,350	223,580	162,364	11,155	15,991	1,277,640
α[3]	0.88	0.81	1.00	1.00	1.00	0.89
Claims per beneficiary	..	..	..	..	..	18.8
1982/83						
Number	891,274	231,833	173,891	11,947	17,126	1,326,071
α	0.92	0.83	1.00	1.00	1.00	0.91
Claims per beneficiary	..	..	..	..	..	19.3
1983/84						
Number	915,345	250,345	223,666	13,586	14,743	1,417,685
α	0.89	0.89	1.00	1.00	1.00	0.91
Claims per beneficiary	..	..	..	..	..	19.5
1984/85						
Number	983,717	272,448	224,172	16,728	14,276	1,497,065
α	0.85	0.83	1.00	1.00	1.00	0.88
Claims per beneficiary	..	..	..	..	..	20.7
1985/86						
Number	1,004,849	292,842	186,340	18,284	14,197	1,516,512
α	0.87	0.85	1.00	1.00	1.00	0.88
Claims per beneficiary	..	..	..	..	..	22.4
1986/87						
Number	992,700	304,644	190,036	19,826	13,920	1,521,126
α	0.93	0.84	1.00	1.00	1.00	0.92
Claims per beneficiary	..	..	..	..	..	24.0
1987/88						
Number	1,030,000	324,367	194,345	21,670	13,851	1,584,233
α	0.94	1.00	1.00	1.00	1.00	0.96
Claims per beneficiary	..	..	..	..	..	22.5
1988/89						
Number	1,064,100	353,660	194,360	23,690	13,800	1,649,610
α	0.94	1.00	1.00	1.00	1.00	0.96
Claims per beneficiary	..	..	..	..	..	22.9

1 Table refers to all claims whether for a prescription or over the counter medication.
2 Number of eligible persons, Z.
3 α = the proportion of the eligible population that are beneficiaries.
4 Average number of claims per beneficiary, q.

Source Ontario, Ministry of Health, "Managing by Results, Results Abstracts", various issues.

Table 1-3

The Age Structure of Ontario's Population: 1986-1996

	Age group					
	0-19	20-64	65-74	75-84	85+	All
			(000's)			
1996	2,569	6,076	765	416	137	9,963
1986	2,559	5,550	603	303	87	9,102
% change	0.4	9.5	26.9	37.3	57.5	9.5

Source Ontario, Ministry of Health (1988b, p. 17).

Table 1-4

Prescription Drug Utilization by Age, Saskatchewan, 1986/87

Age Group (1)	Eligible population (2)	Number of Beneficiaries[1] (3)	π ((3)/(2)) (4)	Number of prescriptions	
				Total (5)	Per beneficiary[2] (6)
0-4	79,644	68,523	0.86	270,795	3.95
5-14	149,450	93,648	0.63	289,179	3.09
15-24	165,940	118,753	0.72	552,832	4.66
25-34	172,738	122,232	0.71	633,118	5.18
35-44	117,045	79,963	0.68	499,179	6.24
45-54	87,872	62,379	0.68	575,021	9.22
55-64	89,213	67,502	0.76	858,462	12.72
65-74	75,105	61,719	0.82	1,023,109	16.58
75-84	40,420	36,673	0.91	741,290	20.21
85 and over	12,485	12,171	0.97	271,972	22.35
Total	989,912	723,563	0.73	5,714,957	7.90

1 Beneficiaries are persons who received at least one prescription drug paid for by the provincial drug program. A beneficiary is placed in an age group depending upon their age on the date of the last prescription dispensed.

2 Column 6 = column (5) / column (3).

Source Saskatchewan Health Prescription Drug Plan (1987, Table III, p. 19).

Table 1-5

Expenditures Under the Ontario Drug Benefit Programme: 1979/80 to 1987/88.

Year	Total[1]	Dispensing fee	
	$ Million[2]	$ Million[2]	%
1979/80	110.3	49.8	45.1
1980/81	136.6	58.3	42.7
1981/82	171.0	71.5	41.8
1982/83	221.3	86.9	39.3
1983/84	263.5	102.5	38.9
1984/85	302.2	119.3	39.5
1985/86	349.7	129.9	37.1
1986/87	409.6	150.6	36.8
1987/88[3]	491.3	180.9	36.8

1 Refers to only to claims under the ODB with dispensing fees. In 1986/87 claims with fees accounted for approximately 90 per cent of all ODB expenditures. The remaining 10 per cent refers to over the counter drugs as well as flu vaccine and oxygen.
2 Current dollars.
3 Estimate

Source Ontario, Ministry of Health (1988b, Appendix 3, n.p.).

2 ORIGIN, EVOLUTION AND RATIONALE FOR GOVERNMENT INTERVENTION IN THE ONTARIO DRUG MARKET

INTRODUCTION

To a large extent, the present Ontario drug market can be considered the direct result of government intervention over the past 20 years. That intervention culminated in the Ontario Drug Benefit Act and Prescription Drug Cost Regulation Act, both passed in 1986. In this chapter the origin, evolution and rationale of the role of government leading up to this major overhaul is charted. In the process, the role, significance and recommendations of the various reports on the way government intervened is presented and discussed.

PARCOST AND PRODUCT SELECTION: 1969-1974

In the 1960s, there was a concern that drug prices were too high and that existing lower-priced brands were unable to achieve any market penetration because of doubts about their quality and safety. These problems were solved at the federal level by a two fold strategy. First, in 1969 the federal government introduced amendments to the Patent Act allowing the issuance of compulsory licenses to manufacturer and/or import drugs still subject to patent protection. This greatly enhanced the introduction of generally lower-priced brands, particularly for high volume drugs.

Second, in order to address concerns about the quality of these brands, often marketed by smaller Canadian-owned firms, the federal government disseminated information on drug quality to health professionals through the introduction in 1971 of the Drug Quality Assurance Program.[1]

At the provincial level Ontario introduced in 1970 PARCOST — prescriptions at reasonable costs.[2] An important part of the PARCOST program was the semi-annual publication of the Comparative Drug Index or CDI. The CDI listed, for different brands of a particular drug, by dosage form and strength, their prices. Only drugs of acceptable quality were listed, upon the advice of the Drug Quality and Therapeutics Committee (DQTC), an expert independent body composed of health professionals. The CDI was distributed to physicians and pharmacists, so as to make them aware of relative prices and thus influence their prescribing and dispensing patterns toward lower-priced brands. However, inclusion in the CDI did not certify two brands of the same drug as interchangeable pharmaceutical products — in the sense that they have the same therapeutic effects and are chemically the same - nor did the policy exempt either the physician or the pharmacist from legal liability if a different brand from that prescribed was dispensed.

Another major element of PARCOST was its acceptance by the Ontario Pharmacists' Association (OPA).[3] Specifically, an

agreement was signed by participating pharmacists and the OPA whereby the pharmacists agreed to dispense, whenever possible, the drugs listed in the CDI. In addition, the pharmacists agreed to charge no more than the cost of the drug listed in the CDI plus a maximum dispensing fee negotiated with the Ministry of Health. In order to encourage pharmacists to enroll in PARCOST, prices were deliberately set to reflect the purchase of "relatively small packs which can be readily stocked by even the smallest pharmaceutical outlet" (Bailey et al., 1978, p. 3). In many cases the prices listed in the CDI also included a 10 per cent wholesale margin "since it is assumed that some of the smaller pharmacies would have to purchase the product ex wholesale warehouse" (Ibid., p. 3). Participating pharmacies were identified by a decal designed to assure the public that reasonable prices were to be charged and the government funded advertising to alert the public, primarily cash paying at that time. By January 1973, 59 per cent of the pharmacists in Ontario had signed a PARCOST agreement, although many "others are following PARCOST principles but do not as yet choose to sign a contract" (Ferguson et al., 1973, p. 12).

The Porter Committee was charged by the Minister of Health in 1971 with examining rules and procedures permitting pharmacists to select a different brand from that prescribed.[4] It recommended that pharmacists be empowered to select and dispense a comparable pharmaceutical product[5] "provided that the cost of such product to the consumer is equal to or lower than the lowest priced

comparable pharmaceutical product listed in the PARCOST Comparative Drug Index." (Porter, et al., 1971, p.1). This recommendation was made only after the Committee was satisfied that the procedures and knowledge of the DQTC were sufficient to ensure therapeutic equivalence -- interchangeability. Although not a specific recommendation Porter et al., (1971, p. 9) did comment that the "government should accept whatever legal liability that might emanate from the C.D.I."

In 1972 the provincial Pharmacy Act was amended to allow permissive product selection and exempt pharmacists and physicians from legal liability when this took place.[6] In other words, product selection was at the discretion of the pharmacist. In selecting a different brand from that prescribed -- product selection -- the pharmacist had to select from those brands listed as interchangeable in the CDI and choose a brand lower in cost than the drug prescribed. In fact, the pharmacist had to supply a product at a price not in excess of the listed price for the lowest priced interchangeable pharmaceutical product in his inventory and the maximum dispensing fee as set out in the CDI.

PARCOST itself was reviewed in 1972-73 to see whether it was "achieving its objective to provide prescription drugs at reasonable cost for the people of Ontario." A Task Force was established by the Ontario Council of Health at the request of the Ministry of Health.[7] In general, the Task Force concluded the

program generated substantial savings compared with its costs and that it appeared there was considerable confidence in the CDI.

The Task Force was concerned, nevertheless, about the efforts by some of the major drug firms to cast doubt "on the efficacy of the less expensive products listed in the C.D.I. as interchangeable with the more expensive one" (Ferguson et al., 1973, p. 9). The Task Force, however, rejected these attempts, concluding that it was satisfied that "the best available modern methods for evaluating drugs" were used to admit drugs to the CDI and that "admirable and objective judgement" was used in making these decisions. (Ferguson et al., 1973, p. 13). It made a number of recommendations designed to strengthen confidence in the interchangeability and the CDI. These included an information program aimed at health professionals emphasizing the quality aspects of PARCOST. Although no formal program was implemented some measures, such as the provision of more information in the C.D.I., were taken in the spirit of these Task Force recommendations.

The Task Force also recommended that for a prescription written generically -- diazepam rather than one of the many different brands of this drug such as Valium, Vivol, Novodipam, or E-Pam -- only a product listed in the CDI be used and that it be the lowest-priced interchangeable product in the pharmacist's inventory.[8] This recommendation reflected the fact that the 1972

Pharmacy Act amendments had an apparent "gap" or "loophole" in that no reference was made to generic prescriptions reflecting, no doubt, the fact that most prescription were written by brand name. For generic prescriptions the "pharmacist is thereby permitted to select any preparation in his inventory which corresponds to the description. It could be the most expensive one, although that presumably would not be the intention of the prescriber. It could also be the cheapest but of a quality not approved for inclusion" in the CDI (Ferguson et al., 1973, p. 5). Changes were made to the Health Disciplines Act, (into which the Pharmacy Act was incorporated) in 1974 and proclaimed in July 1975, to meet this concern.[9] Essentially a generic prescription was to be priced at the listed cost of the lowest priced interchangeable pharmaceutical product in the pharmacists inventory plus the PARCOST negotiated dispensing fee.

There are sound rationales for government intervention in the retail drug industry of the sort that Ontario undertook between 1969 and 1974 with respect to PARCOST and product selection. The former can be justified on grounds of market failure in that there was inadequate provision of information on drug quality, safety, and interchangeability.[10] Information of this sort may be undersupplied by the market because of its unique characteristics. Once the information is produced it may be difficult for the provider to recover his costs. If it is in the interests of society to provide such data then government has a rationale for

intervention. The choice of an independent committee of medical and pharmaceutical experts -- the DQTC -- to make judgements and recommendations concerning quality and interchangeability should provide the necessary confidence in the CDI for physicians, pharmacists and patient/consumers.

The product selection rules reflect a different rationale for government intervention. The retail pharmacy market for both pharmacists' services and prescription drugs was (and is) not, in general, competitive, in that under the relevant professional statutes and attendant regulations severe restrictions were placed on the ability of the pharmacist to disclose either the dispensing/professional services offered or the price of drugs. Furthermore, the patient/consumer may experience some difficulty in judging the information on various brands of given drug. Hence, government acts on behalf the patient/consumer by introducing rules that mimic those of a well functioning market.

THE INTRODUCTION OF THE ONTARIO DRUG BENEFIT PROGRAM: 1974-1976

The Ontario Drug Benefit Program was introduced in 1974 and provided free drugs to "needy senior citizens and to persons receiving social assistance." (Ontario, Ministry of Health, 1988c, p. 6). The next year this program was extended to include "all Ontarians 65 years of age and over, who received Old Age Security, or who resided in Ontario for the past 12 months and

were Canadian Citizens or landed immigrants." (Ibid, p. 7). In 1976 persons eligible for drug assistance from municipalities through the general welfare assistance legislation came under ODB. Coverage has remained essentially unchanged since 1970, apart from a few minor additions in 1989.[11]

Under the ODB program patients/consumers were provided with drugs free of charge at the point of dispensing.[12] Each eligible person received a card, for presentation to the pharmacist, indicating that they were an eligible beneficiary under ODB. Reimbursement for the pharmacists' services and drug cost was made by the provincial government upon a receipt of a claim by the pharmacist. Funding was open ended in that given:

- the eligible population,
- list of drug benefits and associated prices, and
- a negotiated dispensing fee,

the provincial government paid all claims -- a situation that remains essentially unchanged to-day.

The importance of the ODB program has grown considerably. At the present time ODB accounts for approximately 40-45 per cent of prescriptions dispensed by retail pharmacies. (Ontario, Ministry

of Health, 1988b, p. 1). In 1978 ODB accounted for only 25 per cent of the dollar volume of Ontario drug prescription (Bailey et al., 1978, p. 8); in 1975, its first full year of operation, 17 per cent (Spitzer et al., 1988, p. 4).

All drug benefits under the ODB and the reimbursement price were listed in the 1974 Drug Benefit Formulary. Unlike the C.D.I., only one price was listed for a group of interchangeable pharmaceutical products. For example, for diazepam 10 mg tablets the following appeared:

Drug identification number	Brand name	Firm	price
260339	E-Pam	ICN	0.0404
013773	Vivol	HOR	
272450	Novodipam	NOP	
013293	Valium	HLR	

Source Ontario, Ministry of Health (1974, p. 35).

where the price listed was that of the lowest-cost brand. In August 1975, after only two issues, the DBF was merged with the PARCOST Comparative Drug Index -- the Formulary. In the merged publication all the prices were listed, but the lowest price was printed in bold type face. Thus, the listing for diazepam 10 mg tablets was:

Drug identification number	Brand Name	Firm	Price
280429	E-Pam	ICN	0.0237
303461	Diazepam	SAP	0.0240
272442	Novodipam	NOP	0.0255
288713	D-Tran	MOM	0.0278
311588	Diazepam	MPT	0.0278
284076	Serenack	CPN	0.0352
037265	Paxel	ELL	0.0469
013765	Vivol	HOR	0.0550
013285	Valium	HLR	0.0702

Source Ministry of Health (1975, p. 33)

The PARCOST CDI and Drug Benefit Formulary have remained one publication to the present. However, for three Formularies — December 1986, January 1987 and July 1987 — the CDI and Drug Benefit Formulary were published separately, rather than combined, in the same volume, while with the passage of Bills 54 and 55, the prefix PARCOST was dropped.

There were some similarities and differences between the part of the market served by the ODB and the remainder with respect to dispensing fee, drug cost and the quantity dispensed. There were certain general rules that applied to all of the market and some arrangements that covered only the ODB sector. However, as we shall see some of the arrangements that were initially confined to

the ODB sector became common practice in the entire Ontario market.

The ODB, through the Ministry of Health, and the pharmacists, through the OPA, negotiated a dispensing fee as part of an overall Participation Agreement that set out the terms and conditions of a pharmacy's involvement in the ODB. Apart from the first few years, the ODB and the PARCOST fee have been identical. (Gordon, 1984, Appendix B, n.p.). The government would reimburse, under the Agreement, the pharmacy the lower of the pharmacy's "usual and customary... dispensing fee charged to the general public" and the PARCOST fee. This was the "marketplace" concept introduced in the 1976 Participation Agreement, designed to constrain the pharmacist from charging the government a higher rate that the non-ODB market (Gordon, 1984, pp. 29-30).

Under the ODB the pharmacist would be reimbursed for a particular interchangeable product no more than the lowest-priced brand listed, irrespective of which brand was actually dispensed and whether or not the pharmacist had the lowest priced brand in his inventory. In the above example, for diazepam 10 mg tablets, for the first combined CDI/DBF publication, the pharmacist would be reimbursed 0.0237 whether E-Pam or Valium was dispensed.[13] This became referred to as the MAC or Maximum Allowable Cost.

In the non-ODB market product selection was, as noted above, permissive. Indeed, if the pharmacist decided not to select and did not belong to PARCOST, he could charge whatever price he liked for both the drug cost and dispensing fee -- his usual and customary fee. However, it would appear that the Formulary was usually followed as a pricing guide for individual brands of a drug (Gordon, 1984, p. 37). Thus, if his usual and customary fee exceeded the PARCOST fee, the pharmacist would have an incentive to withdraw from PARCOST and not product select.

Under ODB only one dispensing fee was charged per month's course of treatment irrespective of whether the prescription was for a 100 or a 10 day course of treatment.[14] This reflected the fact that at first ODB only covered needy senior citizens and persons receiving social assistance, for which persons qualified on a monthly basis. However, when ODB was extended a year later to cover the drug costs of all older people, the rationale for one fee per month's course of treatment largely disappeared. Older people typically are on maintenance drugs for which much longer course of treatment than a month can safely be provided and dispensed at one time. Indeed, approximately 70 per cent of ODB claims are for such maintenance drugs. (Gordon, 1984, p. 30). Nevertheless, when the ODB was extended to all older people, the monthly rule remained part of the Participation Agreement.[15] However, it should be noted that up until 1977, the ODB dispensing fee remained somewhat below the PARCOST fee in recognition of

this; subsequently the two were identical. (Gordon, 1978, Appendix B, n.p.). In the non-ODB market there was no such rule, but apparently it became common practice to dispense in monthly course of treatment, even if the prescription was for longer, and collect a separate dispensing fee for each month's supply.

In considering the rationale for government intervention with respect to the ODB, two aspects will be addressed. First, the objective and justification for the ODB itself and secondly, the merit of different rules concerning price and (in effect) product selection for the ODB and non-ODB markets.

The objective of the ODB, according to internal Ministry of Health documentation, is as follows:

> To provide as a drug benefit to specified groups of persons, including senior citizens and welfare recipients, designated prescription drugs with the intent of alleviating the financial burden of drug therapy.[16]

A similar rationale was used in 1988 when the Ministry of Health agreed to implement an interim recommendation of the Lowy Inquiry that medically indicated drugs and drug related therapies be made available at no charge to sufferers of cystic fibrosis and thalassemia.[17] Specifically, the Lowy Inquiry was concerned about, "the crushing financial burden that long-term high drug costs impose upon a small group of persons who suffer" (Pharmaceutical Inquiry of Ontario, 1988b, p. ii) from those two

conditions. The Minister in agreeing to these recommendations of the Lowy Inquiry stated, "I want to make sure that these two special groups, who face catastrophic drug costs, have equity in access to the drugs they need" (Ontario, Ministry of Health, 1988d, p. 1).

Although there is a clear rationale for the ODB, the way in which the program is structured is not entirely congruent with its objective. There is a presumption that the program is alleviating the financial burden. While this is clearly the case for the pauper, it is not the case for a millionaire over 65 years of age. Equally, to the extent that the ODB is providing relief for persons from catastrophic costs, it is not clear why first dollar coverage is needed. In other words, it would appear that ODB program is excessively generous given its rationale and objectives -- more public funds are being dispersed than is necessary to meet the program's stated objectives.

Two reasons may be given for this excessive generosity. One reason, of course, is the dislike by many of means tested benefits. The Pharmaceutical Inquiry of Ontario (1988b, p. 13) discussion of extending drug benefits to cystic fibrosis and thalassemia patients reflects this when they remark that, the "affected person or family should not have to prove financial need in order to receive a life-preserving benefit". A second reason is that it is sometimes argued that without making a benefit

available to all within a particular group irrespective of income, the program loses support and may disappear. In the case of the ODB this applies to those over 65 years of age, by far the biggest beneficiary group (Table 1-2).

The second aspect of the government intervention in the 1974-1976 period was the establishment of different rules with respect to dispensing fee and ingredient cost for the government funded ODB and the private or non-ODB market. The different rule for the fee was to ensure that the ODB did not pay a higher dispensing fee than the usual and customary fee of the pharmacist -- a seemingly sensible policy. However, the price selection rules are much stronger for the ODB than the non-ODB market, raising the possibility that the non-ODB customer will pay higher drug costs. It is not clear what rationale can be provided for this result, whether intended or not.

SOLVING PROBLEMS: DRUG PRICES, DISPENSING FEES, DISPENSE QUANTITY AS WRITTEN, 1976-1986

Introduction

The period from the inception of PARCOST in 1970 to the establishment and extension of the ODB in 1974-1976 saw the creation of a framework of rules and regulations that set the basic parameters of the Ontario retail drug market with respect to prices, dispensing fees, and the length of course of treatment

dispensed, and the split between the public (i.e., ODB) and private (i.e., various third-party programs and the cash-paying customer) sector. The next ten years were spent investigating and correcting some problems that arose out of this framework. The culmination of these efforts was the passage of two major bills -- 54 and 55 -- in 1986.

In this section, the background and findings of two major reports, the Bailey Committee released in 1978 and the Gordon Commission Released in 1984, are discussed and presented. While some of the solutions of the Bailey Committee were implemented in the late 1970s they had little impact, beyond a year or two. It was the combined weight of these two reports, the failure to implement successfully some of Bailey's recommendations, plus a growing chorus of disapproval, from such disparate bodies as the Ontario Advisory Council on Senior Citizens to the Provincial Auditor General, concerning government intervention in the drug industry, that finally led to something being done -- Bills 54 and 55.

Purchasing Advantage and Price Spread

A major concern that emerged in the late 1970's was that the drug prices listed in the CDI/DBF (Formulary) particulary for high volume multiple source drugs were "too high" in two senses. First, the prices were based on smaller package sizes. While this

was appropriate for the majority of drugs, which were low volume, this was not the case for high volume drugs. These were typically purchased in much larger package sizes. The lower unit price of the larger package sizes were not reflected in the prices charged either the consumer or the ODB. Second, for a given package size the price quoted in the Formulary was above the actual transaction price. Each is discussed in turn.

As noted in the above discussion of PARCOST, the prices that the Ministry of Health requested of manufactures for inclusion in the Formulary were for smaller package sizes -- 50's and 100's -- not the larger sizes -- 500's, 1,000's and 5,000's. It was recognised that some pharmacists would indeed purchase the larger package sizes with consequent savings. This margin, the so-called purchasing advantage, was always considered legitimate; indeed it was mentioned specifically in the Formulary. The first time was the July, 1978 Formulary, which contained the following statement:

> Where more than one package size available, the one selected for listing indicates the most economic and efficient size for an average community pharmacy to purchase. It is recognised that lower prices will be realized through efficient operational practices and bulk purchasing, and improvements in this regard will be stimulated and encouraged. (Ontario, Ministry of Health, 1978, p. v).

with a similar statement appearing in successive Formularies prior to the passage of Bills 54 and 55. The concern was that for selected high volume drugs the average community pharmacy was

typically purchasing in 1000's and so the higher unit price of 50 or 100 package size should not be used as the basis for reimbursement.

The concern that manufacturers quoted prices to the provincial government for the given small package size that were too high was first voiced by Porter et. al., (1971, pp. 14-17). The concern was that some manufacturers were deliberately quoting unrealistically high list prices for brands in the Formulary and then using the difference between the list and the actual or transaction price as a marketing device, since the former price could be charged in the marketplace, with the difference being captured by the pharmacist. In other words, manufacturers did not compete by getting the lowest price in the Formulary; but by maximising the difference between the list or quoted price in the Formulary and the actual or transaction price, as way of getting the pharmacist to stock that particular manufacturer's brand. In later parlance this become referred to as "working the spread". It was with considerable prescience that Porter et al., (1971, p. 15) had remarked, "It would appear to be incredibly difficult to ferret out misleading list prices or special deals."

The Bailey Committee

The existence of these concerns over prices led the Minister of Health to create the Bailey Committee in October 1977, with a report in April of the following year. It found that "although the Formulary prices are almost invariably based on relatively small package sizes such as 100's, the vast majority of the high volume products are normally purchased in substantially larger packages." (Bailey et al., 1978, p. 12). For example, the report contains data on 13 high volume drugs which shows that the percentage of total unit sales in larger packages (typically 1000's) rather than the smallest size (typically 100s) varied between 82 per cent and 99 per cent, with an unweighed mean of 95 per cent (ibid., Table "A", n.p.).

The Committee also found evidence that the price quoted for the package size listed in the Formulary was too high in relation to actual or transaction price. It stated its finding as follows:

> On some major items the smaller package sizes represent an insignificant portion of total sales. Therefore there is no need for the manufacturer to quote such package sizes competitively for the Formulary, since these small packs are seldom purchased. On the other hand, the aggressive competition among drug manufacturers in high volume fields forces the true cost to the pharmacist to relatively lower levels in the larger package sizes commonly purchased (Ibid., p. 12).

The Committee continued,

> In verification of the above, certain manufacturers have acknowledged that the present system is "self-defeating" in that it actually forces manufacturers to raise prices quoted to the government and then price their products attractively to those pharmacists who "work the spread" (i.e. - capitalise on the difference between the quoted price versus the actual cost). (Ibid., p. 12).

Thus, the use of smaller package size prices and the spread were connected.

These findings led the Committee to recommend that for certain high volume drugs the price in the Formulary be based on such larger package sizes, and that the actual acquisition or invoice cost be used. This change duly occurred in 1979 for 36 high volume drugs, which use package sizes of 1,000 rather than 100. For example, the lowest priced brand of diazepam 10 mg tablets fell from $0.0300 in the July, 1978 Formulary to $0.0105 in the January, 1979 edition; the corresponding figures for the 5 mg tablet was $0.0236 and $0.0062.[18] However, there was an offsetting upward adjustment of 22¢ to the ODB dispensing fee as compensation to the pharmacists.[19]

However, the Bailey Committee went far beyond the issue of whether the prices in the Formulary were "realistic." Indeed, it could be argued that of the reports reviewed in this section, despite its brevity, it was the most radical and perhaps

insightful. As noted above, the Formulary listed the unit price of all brands even though ODB paid only the lowest price listed for interchangeable pharmaceutical products. The Committee commented that since the Formulary "has become accepted as a pricing guide throughout Ontario and even to some degree in other provinces ... prices quoted in this government publication may create a hardship for a large segment of the population." (Bailey et al., 1978, p. 12). This led the Committee to recommend that for interchangeable drugs only a single price be listed, a situation that had obtained for the first two Drug Benefit Formularies issued in 1974. This recommendation was implemented in the January 1979 Formulary (Ontario, Ministry of Health, 1979a). However, successive editions of the Formulary listed all the prices (e.g., Ontario, Ministry of Health, 1979b), apparently because the College of Pharmacists was able to convince the Ministry of Health that all the prices needed to be published in order for the College enforce section 155 of Health Disciplines Act, as it related to product selection of a lower priced brand.

The Bailey Committee also made a series of "additional proposals", none of which would appear to have been implemented immediately following the receipt of the report by the government. Nevertheless, since some were implemented in Bills 54 and 55 it is worth highlighting the more important suggestions, full details of which are found in Appendix A.

The Bailey Committee recommended that in the non-ODB market "provisions should be made to enable the cash paying public to make a rational choice of pharmacies when having prescriptions filled. Pharmacies should be allowed to declare their dispensing fee through both the advertising media and by means of discreet plaques or cards at the pharmacist entrance or in the dispensing area". (Bailey et al., 1978, p. 15). It also proposed that the public should be made aware of the price paid by the ODB and that less costly interchangeable pharmaceutical products are frequently available. The Committee also suggested a token co-payment under ODB "to discourage over-utilization." (Bailey et al., 1978, p. 16). The dispensing fee also featured in the Bailey Committees' additional proposals. It is perhaps with quoting this in full,

> That the common practice of dispensing only 30 days medication to senior citizens should be modified in view of the fact that most of these individuals are on long term therapy and many find it inconvenient to visit the pharmacy monthly. Dispensing of more rational quantities at one time should result in substantial economies to the pharmacy. These savings could be passed on to the taxpayer, and at the same time the hardship of repeated visits to the pharmacy by the ODB recipients could be alleviated. (Bailey et al., 1978, p. 16).

An earlier joint report by the Ontario government and the Ontario Medical Association, on controlling health care costs in general, not just ODB, was also concerned about the "dispensing of drugs on an unduly frequent basis" (Taylor et al., 1977, p. 25). Subsequently, the Provincial Auditor in his 1979 report (Archer,

1979, pp. 81-84) the Ontario Standing Committee on Public Accounts in 1980. (Ontario, Standing Committee on Public Accounts, 1980, p. 37) raised the issue of a dispensing the whole quantity prescribed at once. At first, in response to the Provincial Auditors criticisms, the Ministry of Health doubted that the project savings would be large. However, a Woods Gordon (1981) study commissioned jointly by the Ministry of Health and the OPA suggested a dispense as written policy would result in considerable savings.

Subsequently the issue was taken up by the Ontario Advisory Council on Senior Citizens. In June 1984, the Council recommended to the provincial government that,

> Because of the difficulty of access for many senior citizens, particularly those in under-serviced areas, to pharmaceutical outlets at 30 day (4 less) intervals; and in order to cut down prescription dispensing costs which are disproportionately higher for smaller quantity prescriptions; it is recommended concerning the rule of redispensation at intervals of thirty days for uncontrolled drugs that an extension from 30 to 90 days be considered, at the discretion of the prescribing physician (Ontario Advisory Council on Senior Citizens, 1985, p. 4).

Thus, the Council had both the interests of the taxpayer and the senior citizen in mind when making this recommendation.[20]

The Gordon Commission

The major problem addressed by the Bailey Committee -- that of inflated drug prices -- would not go away, however. It was commented upon with respect to high volume interchangeable drugs in the 1983/84 Annual Report of the Provincial Auditor under the heading, "Excess Costs Incurred Repayments under Ontario Drug Benefit Plan, Ministry of Health."[21] Apparently the widening variance between the prices quoted in the Formulary and the actual selling price to the pharmacy had begun two years before, according to Ministry of Health comments quoted in the Auditor's report. The Ministry estimated that for 18 high volume multiple source drugs that the difference between the lowest price in the Formulary and actual drug costs to the pharmacist was for 1983 $14.4 million, or about 5 to 6 per cent of total ODB expenditures on drugs and fees.[22]

In the February 1984 Formulary for 30 high volume multiple source drugs prices were lowered, with the objective of reducing, if not eliminating, the difference between actual or transaction prices and Formulary prices. Overall, for the ODB the average drug cost per claim for multiple source drugs fell from $4.98 for July 1983 to January 1984 to $4.09 for February to June 1984 (Table 4-3). At the level of individual drugs, for example, the lowest priced brand of diazepam 5 mg tablets fell from $0.0197, in the July 1983 Formulary, to $0.0030, in the February 1984 edition;

and cimetidine 300 mg tablets from 0.1500 to 0.0967, over the same period -- this even after the July 1983 price of cimetidine had apparently been substantially reduced for that Formulary.[23] Twenty of the 30 had their prices adjusted on the basis of package sizes of 1000; the remaining 10 on the basis of 500's. Of the former group 15 had been on Bailey's list[24] for which the ODB had tried to eliminate the spread only five years previously. As before, the pharmacists received an offsetting increase in their ODB dispensing fee to compensate for loss of spread, but $0.35 instead of $0.22.[25]

The Ontario provincial government was also having considerable ongoing difficulty negotiating a dispensing fee with the OPA as an examination of Ministry of Health files at this time revealed.[26] Part of this was related to the issue of whether the negotiated dispensing fee should increase if more "realistic" prices were entered in the Formulary. Indeed, resolving this issue together with the February 1984 drug price rollback and 35¢ fee increase was part of a package that led directly to the creation of the Commission on the Pricing of Multiple-Source Drug Products in Ontario, Gordon Commission, in March, 1984.

The Commission had Terms of Reference that not only concerned all of these issues, but also whether any change was required in section 155 of the Health Discipline Act which, as noted above, governed product selection in Ontario. The report was completed

on August 31, 1984, when it was presented to the four principal parties that were involved in its creation: Ministry of Health; Ontario Pharmacists' Association; Canadian Drug Manufacturers Association; and the Pharmaceutical Manufacturers Association of Canada. The CDMA represented the Canadian-owned generic part of the industry while PMAC represented the interests of the bulk of the industry, typically composed of large foreign-owned drug firms responsible for the introduction of new drugs.

Before turning to the specific recommendations of the Gordon Commission it is perhaps worth making two general points. First, there was substantial agreement or consensus by the principle parties on the problems that plagued the Ontario retail drug market, such as the existence of the price spread. There was even a consensus that such things should stop. However, when it came to solutions there was substantially less consensus. On the issue of price spreading, for example, the Pharmaceutical Manufacturers Association of Canada favoured Actual Acquisition Cost, the Canadian Drug Manufacturers Association the extension of the ODB mandatory price selection to the non-ODB market, together with a listing of only one price for an interchangeable drug, the Ontario Pharmacists' Association favoured incremental, marginal change, while the Ministry of Health was prepared to consider unspecified dramatic changes (ibid, pp. 51-58). Second, in making its recommendations, Gordon (1984, pp. 78-79) decided "to introduce as little disruption into the retail prescription market as

possible". After considering alternative models, Gordon (1984, p. 79) concluded "that the current structures have no more inherent faults that any other structures which could be contemplated".

The Gordon Commission's recommendations in many ways echoed those of Bailey. It found that price-spreading was important and recommended that the price in the Formulary, "should be no more than 20 per cent higher than the best volume price available from the manufacturer during the formulary period for the package size listed." (Gordon, 1984, p. 80). This was to encourage pharmacists to purchase efficiently and manufacturers to price competitively. Gordon (1984, p. 17) defined purchasing advantage "which arises from the pharmacist purchasing in bulk and thereby paying less than the Index/Formulary price for a drug product". In an accompanying recommendation it was made clear the existing approach of using package sizes of 1,000 to determine price of high volume drugs should be maintained. Bailey et al., (1978, p. 15) also had referred to "a reasonable extra margin should be allowed to the retail merchant who buys in quantity" and fixed it in the range 10 to 20 per cent. Manufacturers which submitted inaccurate price data for inclusion in the Formulary should be penalised by the Ministry of Health, for example, ceasing to reimburse that manufacturers' products or restricting price increases of that manufacturer. Unlike Bailey, Gordon recommended

all prices be published, not just the lowest for interchangeable drugs.

On the dispensing fee the Gordon Commission recommended that a single fee continue to be negotiated between the OPA and the Ministry of Health that would be applicable to both ODB and PARCOST. In order to assist in the process for determining the fee, cost information should be collected. Finally, the dispensing fee should not be adjusted when Formulary prices were lowered, as had happened in the past. Such linkage undermined the Commission's view that the dispensing fee and drug cost be separate items.

The last major set of recommendations related to interchangeability -- section 155 of the Health Disciplines Act. When a pharmacist decided to product select in the non-ODB market he/she had to charge the PARCOST dispensing fee and no more than the lowest interchangeable product in his inventory. A PARCOST pharmacy that did not product select could charge no more than the price of the brand prescribed as set out in the Formulary, and the negotiated PARCOST dispensing fee. However, for a non-participating pharmacy in PARCOST that decided not to product select a different rule applied. In essence no legislation covered such a situation. The practice seems to have been that the pharmacist would charge his usual and customary fee, somewhat above the PARCOST fee, and the drug cost, presumably following the

Formulary. This situation created an incentive for the pharmacist not to participate in PARCOST or product select.

The evidence in Gordon (1984, p. 46) shows that the PARCOST participation gradually dropped so that by 1984 only 15 per cent of Ontario pharmacies belonged and product selection was not practised to a very great extent in the non-ODB market (Ibid., pp. 43-44). The Gordon Commission, recommended that the relevant legislation be amended to allow "pharmacies to charge a usual and customary fee when... product selecting" (Ibid, p. 83). It might be noted, parenthically, that evidence in late 1985 suggested that for generically written prescriptions -- diazepam rather than Valium or Apo-Diazepam -- where the pharmacist was to charge up to the PARCOST dispensing fee whether or not he was a PARCOST pharmacy, 80 per cent of pharmacies violated the legislation and charged a higher fee. The Registrar of the College of Pharmacists was unable to explain why that section of the Act was not routinely enforce.[27] Gordon also recommended that the selected brand be lower in cost than that prescribed, rather than no more than the lowest in the pharmacists inventory.[28]

Like Bailey, Gordon had a series of "secondary recommendations", reproduced in Appendix A. These included co-payment, more information to the consumer concerning prices and dispensing fees, to reduce waste of prescription drugs by more rational prescribing and that physicians by educated as to the benefits of a generic

products. It also recommended -- as did Bailey -- that a dispense as written policy should be implemented. In other words, each prescription should be filled for the entire course of treatment specified, not a separate series of 30 day supplies with a separate dispensing fee charged each time.[29]

The Role of Government

The rationale for government intervention in the market place in terms of:

- correcting a market failure in that there was inadequate information on drug quality, safety and interchangeability;
- acting as an agent for consumers in setting drug prices designed to mimic a well functioning market; and
- as a payor of drugs for certain for certain eligible population groups;

has already been discussed in some detail above. In all cases rationales, usually sound, could be made for government intervention. In the period 1976-1986, the issue was not so much whether there was a rationale for government intervention, but rather government ensuring that it intervened in such a way as to ensure its goals were met. As the discussion makes abundantly

clear the government was having some difficulty in meeting some of its goals, particularly establishing realistic prices in the Formulary. Indeed, while Bills 54 and 55 were being debated in the legislative the ODB was trying, once again, to eliminate the spread by reducing published Formulary prices. This was the third time in seven years.

In discussing the ODB we raised the possibility that the provincial government may have paid a dispensing fee no greater than that in the non-ODB market, and a lower drug cost compared to the non-ODB sector. The period 1976-1986 saw that possibility turn into reality, particularly with respect to drug cost. On the issue of drug cost, Gordon (1984, p. 43-4) comments as follows:

> In the non-Drug Benefit market ... mandatory price substitution [which applies in the ODB portion of the market] does not apply nor, for that matter, does product substitution take place to any great extent. According to estimates given the Commission, of all prescriptions written about 20 % are written generically and must be product selected, and another 40 % are written for brand-specific multiple-source products, and are, therefore, eligible for product substitution. Substitution, however, takes place on only about 6 % of all prescription, or 15 % of these prescriptions eligible for substitution. The savings being lost to the consumer by this low level of substitution are considerable. Using mandatory price substitution as a guide, about $2.15 could be saved on the 12,000,000 eligible prescriptions in the non-Drug Benefit market for a total annual saving of $25,800,00. Since product substitution is practised on only about 15 % of these, or 1,800,000 prescriptions, and since mandatory price substitution is not the rule on these prescriptions, the actual savings are certainly no more than $4,000,000 and likely much less.

This is consistent with other work which showed that for seven high volume multiple source drugs the typically lower priced generic firm market share in 1983 was 26.05 per cent for a private third drug program in Ontario but 78.20 per cent for ODB (Gorecki (1986, Table 5, p. 388).

It would also appear that the dispensing fee was somewhat higher in the non-ODB market, although the extent is not known with any accuracy. Irrespective of whether the fee was higher in the non-ODB market, there is evidence to suggest that ODB interventions may have tended to make it higher than it need be. In 1979 ODB raised its dispensing fee by 22¢ to compensate pharmacists for an income loss because of the elimination of the spread on selected high volume drugs. Since drug utilization patterns differ between the ODB and non-ODB market, prices would have had to be reduced on a different set of high volume drugs in order for non-ODB providers to increase their fee by 22¢. One provider that attempted such a policy together with other cost cutting moves was successfully boycotted by pharmacies and agreed to the fee increase using reduced prices only for the ODB set of high volume drugs.[30] Thus a sensible ODB policy of reducing the spread inadvertently had an adverse effect on the private third party drug programs.

These results raise the possibility that the provincial government placed greater emphasis on its role as a payor under

ODB than as regulator of the Ontario drug market for the benefit all Ontarians.

THE SOLUTION; BILLS 54 AND 55.

Bills 54 and 55 received Royal Assent on July 10, 1986 and were proclaimed in December 1986. In the previous months considerable changes were made to the proposed legislation introduced on April 22, 1986. The original bills gave considerable authority to the government of the day. Indeed, the "Explanatory Notes" to Bill 54 at First Reading said, in part,

> The Act gives broad discretion to the Lieutenant Governor in Council to make regulations concerning,
>
> (a) what prescription drugs and substances are to be listed under the Act;
>
> (b) who is to be eligible for benefits under the Act;
>
> (c) how much the Minister will pay for the supplying of drugs and substances under the Act; and
>
> (d) what charges, if any, may be made directly to eligible persons.

The final bills considerably reduced the discretion of the Lieutenant Governor in Council by specifying in legislation what would have been in the regulations. However, in some cases it would appear that the changes were ones that the government only accepted reluctantly. This reflected the fact that several groups

objected to the legislation, particularly pharmacists, and the government of the day was in a minority situation.[31]

Bill 54, the Ontario Drug Benefit Act, 1986, and Bill 55, the Prescription Drug Cost Regulation Act, 1986, as finally passed were aimed at "ensuring realistic drug prices for all Ontarians, sound management of the government drug benefit program, and consumer protection" (Ontario, Ministry of Health, 1985b, p.1). This legislation implemented many, but by no means not all, of the suggestions of Gordon and even some in Bailey. As such it attempted to deal with the continuing vexing questions of selecting "realistic" drug prices, determination of the dispensing fee, the appropriate length of treatment that should be dispensed at one time, and product selection rules in the non-ODB market.

The Prescription Drug Cost Regulation Act, 1986 sets certain market-wide rules and is based on amended version of section 155 of the Health Disciplines Act, while the Ontario Drug Benefit Act, 1986 sets the legal framework that applies to the ODB segment of the Ontario retail drug market. Previously the ODB had been established under the Ministry of Health Act, 1972 rather than specific program related legislation. The two pieces of 1986 legislation have a number of common features, such as the definition of drug cost and the same Formulary to determine interchangeability. But there are also some marked differences

such as the method of determining the dispensing fee and the price selection rules for interchangeable pharmaceutical products.

The Ontario retail prescription drug market can be divided into the ODB and non-ODB segments. The ODB market covers 20 per cent of the province's population and accounts for 40-45 per cent of the drug bill. (Ontario, Ministry of Health, 1988b, p. 1 and Green Shield Prepaid Services Inc, 1988, p. 24). In the non-ODB market there exist a variety of methods by which persons pay for drugs. Some, indeed probably the majority, are included under a third party program, which may be a benefit negotiated as a part of a collective agreement or paid separately through private insurance. In some instances, however, drugs are paid wholly by the purchaser. One recent estimate suggests that approximately 80 per cent of those not eligible for ODB are covered by some sort of third-party coverage.[32]

The Ontario Drug Benefit Program

The payment by the provincial government for a claim by a pharmacist under the ODB Act 1986 and regulations passed pursuant to that Act, is decomposed into three parts.

- First, a fixed maximum dispensing fee, paid to the pharmacist for the tasks of actually handling or making up the drug for the patient upon presentation of a valid authorization -- the

prescription -- together with any associated professional services. Furthermore, the whole quantity should be dispensed. An elaborate legislated negotiating framework and procedure for the determination of the fee was specified in the legislation. It involved both the Ontario Pharmacists' Association and the Ministry of Health. The legislation provided that different classes of operators of pharmacies could be established.

- Second, the cost of the drug itself, the ingredient or drug cost. The concept used to define this cost was that of the Best Available Price (BAP). This was to be the lower of the manufacturer's price to the wholesaler or pharmacist. The legislation defined the BAP the lowest amount, per unit of a particular brand of a drug, by dosage form and strength, that it "can be purchased in Canada for wholesale or retail sale in Ontario" (section 18(4)).[33] This has become interpreted by the Ministry as the price based on package size that the vast majority of pharmacists in Ontario can purchase.[34] The legislation gave the Ministry considerable discretion in setting the BAP. It did not have to rely just on the submissions of the manufacturers, but could instead use other information available to the Ministry.[35] Finally, the Ministry was given power to search manufacturers, wholesalers and pharmacists to make sure such persons were complying with the Act -- by, for example, providing accurate price data. In

the event of a contravention by a manufacturer the Lieutenant Governor in Council may refuse to designate the product concerned as a listed drug product or may remove that designation (section 16(2)); and

- Third, a fixed percentage margin on top of the BAP, legislated to be between 10 and 20 per cent. It was subsequently set, and has remained, at 10 per cent by the Lieutenant Governor in Council. Prior to Bills 54 and 55, if a drug was distributed via a wholesaler then a 10 per cent margin was added to the manufacturers' price; if more than 50 per cent of the drug was distributed directly by the manufacturers or via an agent no margin was added. What the legislation did was to extend the 10 per cent margin to all direct or via agent distribution drugs. It is clear that legislators in including this in the legislation realised what they were doing and the fact that the Minister of Health was not in favour of such a measure.[36] In part, however, it seems to have been motivated by a concern that small pharmacies may not have been able to purchase at the BAP and that the 10 per cent provided an extra degree of protection.[37] However, the legislation contained provisions for the establishment of different classes of pharmacies, which would have permitted higher dispensing fee to be paid to smaller pharmacies. This might have been a more cost effective solution. Indeed, the Ministry suggested such a move in 1987, but to no avail.[38]

The semi-annual Formulary lists all drugs which are eligible for reimbursement under ODB together with the BAP, but not the margin, which is stated at the beginning of the Formulary. Where several brands of the same drug are certified as interchangeable, and hence appear together in the Formulary's listing by therapeutic classification, only the lowest BAP is printed. In the January, 1989, Formulary, for example, for diazepam 10 mg tablets the following appears:

Drug identification number	Brand name	Firm name	BAP
			.0050
013285	Valium	HLR	
013765	Vivol	HOR	
272442	Novo-Dipam	NOP	
280429	E-Pam	ICN	
362158	Apo-Diazepam	APX	
396230	Diazepam	DTC	

Source Ontario Ministry of Health (1989a, p. 62).

No matter which brand is dispensed, ODB will only reimburse the pharmacist up to this BAP plus 10 per cent.[39]

Non-Ontario Drug Benefit Market

The non-ODB market differs from the ODB market with respect to the determination of the dispensing fee, but the drug cost of a particular product is still determined by the BAP, as printed in the Formulary, with the same fixed 10 per cent margin. Nevertheless, because the pricing rules for interchangeable pharmaceutical products are not the same in both segments of the market the drug cost that the consumer pays may differ for these products. In the case of single source products or those multiple source drugs deemed non-interchangeable the same price will be charged in both the ODB and non-ODB sections of the Ontario market.

Each pharmacist "shall set a single specific amount as a usual and customary dispensing fee". This is required, pursuant Prescription Drug Cost Regulation Act, 1986 regulations, to be posted "clearly and prominently in or adjacent to the dispensary area so that it is readable by the person presenting a prescription..."[40] The fee has to be filed with the Registrar of the College of Pharmacists and may only be changed by notifying the Registrar. The Prescription Drug Cost Regulation Act, 1986 and regulations passed pursuant to it are somewhat ambiguous about when more or less than the usual and customary fee can be charged -- apart, that is, from where certain extra services are supplied, such as home delivery. It would appear that the usual and

customary fee must be charged for the dispensing of an interchangeable drug, although in some instances the fee could be lower. Clearly if this became commonplace the usual and customary fee would have to change. In the case of single source or non-interchangeable drugs a different fee may be charged, but with an explanation to the patient if a higher fee is used[41]. One instance where a different fee is used is birth pills, which have typically been dispensed at a lower fee. As with the ODB, the full quantity of the prescription should be dispensed at one time, subjected to some safeguards.

In the ODB sector of the market there is an elaborate formal mechanism for setting the fee. This is not the case in the non-ODB sector. Here each pharmacist sets his own fee, but it should be noted, that there are severe restraints under the relevant professional statutes that inhibit competition between pharmacies with respect to advertising in the media.[42] There was no legislative requirement that the usual and customary fee bear any relationship to the ODB negotiated fee: except that the Ministry would reimburse under ODB the usual and customary fee if it were lower than the negotiated fee.

In the non-ODB sector of the market drug cost is defined as the BAP plus, of course, the 10 per cent fixed percentage mark-up. However, as noted, differences could arise because of the pricing and product selection rules for interchangeable products differ

between the two parts. Under the ODB no matter which interchangeable product is dispensed the ODB only reimburses for the lowest priced brand -- the BAP listed in the Formulary, as in the diazepam example noted above. In the non-ODB section of the market the legislation specifies that the pharmacist can charge no more than the BAP "that is the lowest among the products in the person's inventory that are interchangeable with the product supplied".[43] In other words, whether or not product selection takes place this is the maximum price that can be charged (plus the 10 per cent mark-up of course) for the drug cost.[44] There are some exceptions. If the consumer requests a particular product then the BAP for that is charged. Since the Prescription Drug Cost Regulation Act, 1986 and regulations passed thereto require the posting of information making the consumer aware of the possibility of product selection such actions may take place. If the physician specifies no substitution then the BAP for that brand is charged.[45] Thus the drug cost portion of a non-ODB prescription for an interchangeable product will vary depending upon the preferences of the physician, consumer, as well as the lowest BAP carried in pharmacist's inventory.

Break With the Past?

The Ontario Drug Benefit Act, 1986 and the Prescription Drug Cost Regulation Act, 1986 was not a break with the past in that they incorporated many of the suggestions made in Bailey and

Gordon reports of 1978 and 1984, respectively. However, in some respects, despite this, it did mark a break with the past. For the first time information, albeit on a limited scale, was being provided to consumers in order to assist them in having a say with respect to determination of fee and brand choice. In this respect, the legislation of 1986 marked a decisive break with the past; the patient/consumer became more of a consumer than a patient.

The BAP concept, which had its genesis in Gordon, was designed to ensure that the Formulary prices were more "realistic", in that they were closer to actual transaction prices. The Ministry was given some discretion in setting BAP and power to inspect company records to determine the veracity of the price data submitted. Bailey's suggestion that only one price be printed for a group of interchangeable pharmaceutical products was adopted, at least in the main body of the Formulary.

The 10 per cent fixed margin on top of the BAP for wholesaling was not consistent with the suggestion of either Bailey and Gordon. The 10 per cent margin resulted in a windfall gain to pharmacists from the ODB of about $14 million or about $7,000 per pharmacy in 1987.[46] To the extent Formulary prices and the 10 per cent were followed in the non-ODB market this would likely increase the total windfall by as much again. Thus, to the extent that BAP reduced the spread, pharmacists received compensation.[47]

As such it would appear to be inconsistent with the spirit, if not the letter, of Gordon's (1984, p. 82) recommendations in this regard.[48]

Dispense the whole or entire drug quantity as written was a longstanding recommendation of several reports. Section 155 of the Health Disciplines Act was replaced by the Prescription Drug Cost Regulation Act, 1986, which permitted the pharmacist to charge his usual and customary dispensing fee when undertaking product selection, rather than the lower PARCOST regulated fee. Indeed, the 1986 legislation sounded the death knell of PARCOST, since it is not referred to anywhere in the legislation and all reference to it is removed from the Formulary. Finally, the legislation followed Bailey and Gordon in that the consumer was provided with more information concerning costs: in the receipt provided to the consumer the prescription cost was broken down, separately, into the dispensing fee and ingredient cost; the usual and customary fee had to be posted in the dispensary area; and information was posted making the consumer aware that lower-priced interchangeable pharmaceutical products may be available.

In several important respects, however, the 1986 legislation did not follow Bailey or Gordon. On the question of interchangeability Gordon had recommended that when a pharmacist selected a different brand from that prescribed they only be required to dispense a lower-priced brand, rather than no more

than the lowest priced interchangeable pharmaceutical product in his inventory. The 1986 legislation adopted a different tack. While leaving the pharmacist free to decide whether he product selected or not, it required that he charge no more that the lowest BAP in his inventory that is interchangeable with the product supplied.

Both Bailey and Gordon had recommended that ODB recipients should be made cost conscious by, for example, a co-payment. This was not adopted in implementing the Ontario Drug Benefit Act, 1986. Nevertheless, section 18(1) (e) would appear to give the Lieutenant Governor in Council the power to authorize a pharmacy to charge an eligible person in supplying a listed drug product. Finally, neither Bailey nor Gordon recommended the elaborate fee negotiating mechanism introduced under the ODB Act, 1986. This, with its statutory involvement of the Ontario Pharmacists' Association is considered by some to have been a major strategic gain by the OPA, substantially limiting the options of the Ontario government in setting dispensing fee to the ODB market.

CONCLUSION

In this Chapter, we have described and discussed the origin, evolution and rationale for government intervention in the drug market in Ontario up to and including the major legislative changes of 1986. The government has attempted to achieve a number

of objectives in intervening in the marketplace. These include the provision of drugs free of charge to certain eligible groups; ensuring and assuring the quality of drugs to all Ontarians; as well as introducing certain rules and regulations with respect to interchangeability, price and product selection, designed to encourage the prescribing and dispensing of lower priced brands. In each case a sound rationale could be for government intervention with respect to these objectives. It would appear that in large measure the government had achieved several of its objectives, particularly as it related to ensuring and assuring drug quality and supplying drugs free of charge to certain groups, such as senior citizens.

Nevertheless, the government had considerable and persistent difficulty in a number of areas, particularly with respect to establishing accurate or transaction prices with which to reimburse pharmacies. This led to the major overhaul of the legislation governing government intervention in the marketplace in 1986 with a view to rectifying these difficulties. The next two chapters assess how successful that legislation was and makes a number of suggestions for improvement.

NOTES TO CHAPTER 2

1 Gorecki (1981) provides extensive discussion on the introduction and use of this legislation as well as the Drug Quality Assurance Program.

2 On PARCOST see Ferguson et. al., (1973), Dyer (1974) and Gorecki and Klymchuk (1980). Dyer (1974, p. 2), for example, states "[W]hen this program was proposed in 1968, preliminary investigations indicated that practitioners were influenced by the illusion that inexpensive drugs meant inferior quality. It became apparent that an Index listing the cost of drugs of assured quality was required by practitioners to select more economical drugs."

3 This paragraph draws heavily upon Gorecki and Klymchuk (1980, p. 7).

4 The brand name prescribed, particularly for newer drugs, was typically that of the higher priced patentee product.

5 Defined as "those products listed in the PARCOST Comparative Drug Index which contain identical amounts of the identical active ingredients in identical dosage forms." (Porter et.al., 1971, p. 1).

6 Dyer (1974), Gordon (1984, P. 26) and Gorecki (1982, pp. 358-9). The actual legislation reads as follows:

52 - (1) Every person who dispenses a prescription may, unless otherwise directed by the prescriber, select and dispense an interchangeable pharmaceutical product other than the one prescribed, provided that the interchangeable pharmaceutical product dispensed is listed as interchangeable in the Parcost C.D.I. and is lower in cost than the drug prescribed.

52 - (2) No person shall knowingly supply an interchangeable product under subsection 1 at a price in excess of the cost of the lowest priced interchangeable pharmaceutical product in his inventory and the maximum dispensing fee as set out in the Parcost C.D.I.

52 - (3) No action or other proceeding lies or shall be instituted against a prescriber or pharmaceutical chemist on the grounds that an interchangeable pharmaceutical product other than the one prescribed was dispensed in accordance with this section.

7 Ferguson et. al., (1973, n.p.).

8 See also Dyer (1974, pp. 10-11). These four brands appeared in the first Drug Benefit Formulary. See Ontario, Ministry of Health (1974, p. 35).

9 The relevant section of the Health Disciplines Act was 155, which read as follows:

155-(1) The same as 52-(1) of the Pharmacy Act, reproduced in note 12.

(2) Where a drug prescribed is listed in the Parcost C.D.I. and the identity of the manufacturer is not specified by the prescriber every person who dispenses a prescription shall select and dispense an interchangeable pharmaceutical product listed in the Parcost C.D.I.

(3) The same as 52-(2) of the Pharmacy Act reproduced in note 12. The only difference was the addition of reference to subsection (2).

(4) The same as 52-(3) of the Pharmacy Act reproduced in note 12.

10 For further discussion see Economic Council of Canada (1979, pp. 48-49). The same rationale would apply to the Drug Quality Assurance Program at the federal level.

11 In 1989, two other groups were added, cystic fibrosis and thalassemia patients (Ontario, Ministry of Health, 1988d, pp. 1-2), while those individuals who just miss receiving social assistance and hence ODB benefits will, with the creation in October 1989 of a "buffer zone" for health benefits "still be able to receive these benefits." (Ontario Ministry of Community and Social Services, 1989, Fact Sheet #1). See below for further discussion.

12 This description refers to most eligible beneficiaries under ODB. However, for those in long-term-care-facilities, the ODB card is presented to the pharmacist on the beneficiaries' behalf.

13 If, however, the physician wrote "Valium" (or any other brand name) the words "no substitution" on the prescription and completed Special Drug Requisition form the Valium would be dispensed and reimbursed at 0.0702.

14 This statement applied, strictly speaking, only to maintenance, or so-called circle one, drugs. For other drugs if more than one claim was made in a month then more than one

fee was allowed. See, however, Chapter 3 for further discussion of this.

15 Under the Agreement the pharmacist upon receiving a prescription for more than a month's course of treatment "may provide to the eligible person one month's supply." The maximum that could be supplied at any one time was six month's supply. One instance where the Agreement suggested such larger quantities could be provided was because of "the absence of the eligible person from Ontario for longer than a month." In such instances the fee would be that "charged by the Pharmacy to a cash paying patient for such increased supply."

16 This statement appears at the top of program summary ODB for management since at least the early 1980's.

17 See discussion in Pharmaceutical Inquiry of Ontario (1988b, pp. 12-14) under the heading "Special High Risk Groups" and Ontario, Ministry of Health (1988d).

18 Ontario, Ministry of Health (1978, pp. 39-40) and Ontario, Ministry of Health (1979a, p. 37). The list is reproduced in Gordon (1984, Appendix A, n.p.).

19 Gordon (1984, pp. 30-31).

20 The Council also prepared a paper entitled "Medications and the Older Adult" which had a list of questions senior citizens should ask health professionals about drugs. These questions were distributed to senior citizens by the ODB (Ontario, Advisory Council on Senior Citizens, 1985, pp. 4-5).

21 Archer (1984, p. 83).

22 Based on numbers in Archer (1984, pp. 84-85).

23 Ontario Ministry of Health (1983, p. 46 and an Addendum), and Ontario, Ministry of Health (1984, p. 46, 75). The discussion concerning cimetidine is taken from Archer (1984, pp. 86-87). Diazepam 10 mg tablets were not on the 30 high volume multiple source drug list; the lowest price in the July 1983 Formulary was $0.0225, in February 1984, $0.0237.

24 Gordon (1984, Appendix A, n.p.).

25 Gordon (1984, p. 16-17; p. 82).

26 The author had access to internal Ministry of Health memorandum for the period 1978-1981 while conducting previous work on the ODB. (Gorecki, 1981).

27 This is based on a series of articles in the Toronto Globe and Mail in September 1985 by Ann Silversides.

28 However, if the prescription is written generally then the pharmacist must continue to charge no more than the cost of the lowest priced interchangeable pharmaceutical product in his inventory.

29 At the federal level a Canada-wide inquiry on the drug industry devoted one chapter to the retail pharmacy market and recommended copayment, greater competition and provision of more information to the consumer. For details, see Commission of Inquiry on the Pharmaceutical Industry (1985, pp. 395-412).

30 For details see R vs. Metropolitan Toronto Pharmacists Association (1984), 3 Canadian Patent Report (3d) 233 (Ont. M.C.J.).

31 These conclusions are based on an examination of the Minutes of the Standing Committee on Social Development, which considerably amended Bills 54 and 55, conversations with persons involved both in the Ministry of Health and pharmacy as well as an examination of the letter writing campaign by the pharmacists, as evidenced in Ministry of Health files. The Ontario Pharmacists' Association also took out newspaper advertisements on Bills 54 and 55, with the heading "Prescription for Trouble!" (see, for example, Toronto Globe and Mail, November 22, 1985, p. A21).

32 See Gordon (1984, p. 33) and also Gorecki (1985, p. 8).

33 The concept of BAP, for example, during the Ontario, Standing Committee on Social Development hearings into Bills 54 and 55 on April 29, 1986, a senior official at the Ministry of Health, Dr. Psutka, remarked, "I just want to try to clarify. In dealing with this matter for over a year and a half now, the concept of best available price has been debated at great length and there seems to be a lot of confusion even now". (p. S-36 of Standing Committee hearings for April 29, 1986).

34 Based on discussions with Ministry of Health officials.

35 While Bills 54 and 55 were going through the legislature in early 1986, the authority of the Minister of Health to use, in setting Formulary prices for drugs, price data other than that submitted by the manufacturers was challenged in Court. This delayed the implementation of more realistic prices in the Formulary. However, the Minister's authority to use other such data was sustained. The Act would appear to clarify that authority. (For details of the Court cases see proceedings of the Ontario Standing Committee on Social Development, Wednesday, April 16, 1986, pp. S-6 to S-8).

36 See Ontario, Standing Committee on Social Development, Minutes for April 29, 1986, pp. S-27 to S-31.

37 Extra because the legislation already had provisions incorporating this eventuality. However, it was felt the paperwork involved was "excessive".

38 See Ontario, Ministry of Health, (1987, pp. 17-18).

39 However, at the back of the Formulary all drug products are listed alphabetically by brand name and the BAP of each product is printed.

40 Section 2(1) of Ontario Regulation 691/86 under the Prescription Drug Cost Regulation Act, 1986. Prior to the passage of this legislation there was no mandatory requirement for fee posting inside the pharmacy.

41 It should be noted, however, that the regulations passed pursuant to the Health Disciplines Act specify that professional misconduct means "submitting an account or charging a fee for any service as a pharmacist that is excessive or unreasonable in relation to the service provided."

42 It should be noted that Green Shield set a maximum fee, "which is a weighted average fee set every six months based on posted fees as reported to us and the volume of prescriptions dispensed in the preceding period." (Green Shield Prepaid Services Inc., 1988, p. 9).

43 Section 2(d) of the Prescription Drug Cost Regulation Act, 1986. If the prescription contains the generic name of the drug then the pharmacist must charge the lowest BAP the interchangeable products in his inventory.

44 See endnote 39 above.

45 A similar rule applies to the ODB for "no substitution" prescriptions, except that the physician is required to complete a PC34 form.

46 In 1986, approximately 60 per cent of drug purchases were via the wholesaler; 40 per cent via the manufacturer or an agent. Assuming these proportions hold for 1987 when total ODB expenditures on drugs was $346.2 million, then 0.04 per cent is $13.8 million. There are about 2,000 pharmacies in Ontario.

47 In 1985, the size of the spread was estimated by the Ministry of Health at $3 million to $4 million a month. The context in which the estimate was given suggested the figures referred to the whole of the Ontario market (Elston, 1985, p. 2). If the

margin remained constant, it would have annually totalled between $36 and $48 million. Subsequently, the Ministry of Health has suggested the loss of spread was closer to $30 million (Ontario, Ministry of Health, 1988c, p. 12). While these numbers are admittedly a little imprecise they do suggest that the 10 per cent compensated the pharmacist for loss of spread.

48 This is not the view of the pharmacists, it should be noted. They see it as embodying the concept of purchasing advantage. However, as the discussion in the chapter makes clear the 10 per cent margin does not seem to be related to Bailey and Gordon's definition.

3 THE DISPENSING FEE

INTRODUCTION

The pharmacist prices a prescription in two parts, a dispensing fee and the ingredient or drug cost, where the latter is defined in Ontario as BAP + 10 per cent.[1] This method of payment reflects a number of factors. According to Carruthers et. al., (1987, p. 136) it "was developed in response to the expressed wishes of the pharmacy profession who preferred to be compensated on the basis of a professional fee, in much the same way that physicians are paid for their services." It was also intended to remove the incentive to dispense higher-priced brands which the previous percentage mark-up system over drug cost provided (Gorecki, 1981, pp. 5-7).

The chapter is divided into three main sections. The first describes briefly the role of the pharmacist and then, in some detail, the implementation of the system introduced in Bill 54 to determine the ODB dispensing fee. The next section employs three criteria to evaluate the current dispensing fee:

- the success of the dispense as written policy;
- whether the non-ODB dispensing fee is higher because the ODB has been successful at limiting its fee increases and
- the adequacy of the present system of determining the fee.

The following section presents a number of options and alternatives to the present situation. For example, different models and methods for setting the dispensing fee are examined. The next chapter addresses the issue of ingredient cost.

THE PRESENT SYSTEM

In this section, the present system under the ODB for negotiating the dispensing fee is laid out in some detail. The cost-based approach to fee determination adopted by the Chairman of the Fee Negotiating Committee is presented. Apart from the initial discussion concerning the role of the pharmacist, attention is confined solely to the ODB part of the market.

Role of the Pharmacist

The pharmacist has a number of roles or responsibilities in the Ontario retail drug market. These include:[2]

- The dispensing function. This is the product-oriented task of filing a prescription. The pharmacist has to interpret and evaluate the prescription for correctness and completeness as well as verifying its authenticity and appropriateness. Preparing the prescribed medication for the patient/consumer, "involves selection of the appropriate product and ensuring that it is dispensed in accordance with requirements of the

prescriber, the needs of the patient and legal considerations". (Pharmaceutical Inquiry of Ontario, 1989b, p. 3). The dispensing function is frequently conducted, in part, by pharmacy technicians under the supervision of the pharmacist.

- Professional services. This is the provision of patient-oriented services, such as "the establishment of patient medication files, professional consultation and health care services information".[3] The use of patient medication files, for example, can be used to monitor drug therapy and patient compliance.

- An entrepreneur. The pharmacy owner does not confine his activities solely to the dispensing function and provision of professional services, unlike a number of European jurisdictions (Goddard, 1989). Pharmacies typically sell a wide variety of non-prescription items including OTCs, shampoo, toiletries, newspapers and so on. These so called front store activities, according to one recent estimate, generate slightly more pharmacy sales than prescription activities (Ontario, Ministry of Health, 1988b, p. 22). Most pharmacies are independent rather than part of a chain.

Thus the typical pharmacy has both commercial and health roles. Concerning the relative importance of the dispensing and

professional service roles, in a discussion paper released by the Pharmaceutical Inquiry of Ontario (1989b, p. 4) it is stated:

> At the present, the majority of patients view pharmaceutical services primarily as product-oriented. The emphasis, therefore, is on obtaining from the pharmacist the correct drug in the proper strength, dosage form and quantity, along with instructions for use.

In other words, the dispensing role would appear to be more important than that of the professional service.

The ODB, in its fee negotiations with the pharmacists, has sort a fee that does not vary with the professional services provided. Indeed, an examination of Participation Agreements prior to 1986, which run to seven pages, finds scarcely a mention of such services.[4] Hence, beyond the dispensing function, it is not clear what the Ministry is purchasing, except insofar as the College of Pharmacists sets and enforces minimum standards of professional service. However, it would appear that none of the professional services mentioned above is required to be provided by the College in its regulations. Yet, somewhat ironically, the College prohibits this information being communicated to the patient/consumer via the media.

The importance of the entrepreneurial role is scarcely surprising. The pharmacy owner is managing a business that competes with, in its non-pharmacy operations, other pharmacies,

but, more importantly, supermarkets, food stores, corner stores and so on. As detailed in the previous chapter, the advent of the spread and interchangeable drugs has involved the pharmacy owner in sourcing his supplies from the lowest cost supplier such that the spread is maximised. Even in its pharmacy operations the pharmacist is competing with other pharmacies in terms of location, hours of business and so on.

In view of the dominance of the dispensing compared to the professional service component, the discussion in this chapter uses the term dispensing fee. The legislation relating to ODB refers primarily to dispensing fee rather than professional services. However, in a discussion of options and alternatives, the issue of provision of professional services will be addressed.

What is the Dispensing Fee?

The dispensing fee under the ODB is a set amount per prescription dispensed that does not vary by the price of the drug, whether it is interchangeable or not, or any of the characteristics of a pharmacy such as size, location or cost.[5] Furthermore, for the ODB, the fee does not vary by the standard or professional services offered by the pharmacist in terms of keeping patient records, providing advice and so on. However, the number of dispensing fees charged per prescription can vary under

the regulations passed pursuant to the ODB Act, 1986, depending upon the length of time for the course of treatment covered:

Number of Days for Course of Treatment	Number of dispensing fees
0-100	1
101-150	1 1/3
151-200	1 2/3
201-250	2

where 250 is the maximum number of days supply that can be prescribed and dispensed on a single prescription at one time.[6] It is not at all clear how this schedule was derived.

The pharmacist, under the dispense as written policy introduced in 1986, was meant to dispense the entire quantity prescribed, subject to the above fee schedule and maximum. The legislation contained certain conditions under which less than the full amount need be dispensed at one time, including, "if the proper exercise of professional judgement by the dispenser so requires".[7] The policy objective was to eliminate the clause in the Participation Agreement under which pharmacist's charged a separate dispensing fee for each monthly course of treatment supplied, even though the prescription might have been for (say) 100 days. The rationale for this change was discussed extensively in Chapter 2. Its

objective was to promote to more cost-effective drug therapy in Ontario.

Machinery

The dispensing fee, since the advent of the ODB, has been negotiated between the Ontario Pharmacists' Association (OPA) and the Ministry of Health.[8] Reaching agreement over the appropriate dispensing fee has often proved a long and protracted affair. In order to ameliorate these difficulties the ODB Act, 1986 introduced the Fee Negotiation Committee (FNC) as a forum to negotiate the dispensing fee, with the Chairman acting as an arbitrator in the event of an impasse. The composition, role and procedure using the FNC to set the dispensing fee is presented in Figure 3-1. It could also be argued that this procedure was introduced in order to reduce the broad discretionary powers that the original Bill 54 had sort to give the government over setting the fee.

In 1987 and 1988 the procedures introduced in the ODB Act, 1986 were used to set the dispensing fee.[9] In both years an impasse was reached in the FNC, with a request being made by the OPA for the Chairman to recommend a fee. This was duly done in both cases, with the recommendation being accepted by the FNC and then the OPA and the Ministry. Nevertheless, despite the use of these new procedures the OPA and the Ministry are still very wide apart

on the appropriate level of the dispensing fee. For example, in 1988 the OPA felt an appropriate fee would be $7.21,[10] the Ministry $5.95.[11]

Approach

While the use of the procedures under the ODB Act, 1986 has not resolved the issue of the appropriate dispensing fee, some progress has been made toward the approach to be used in determining that fee. The Chairman, in his first report, outlined five possible approaches that had been discussed in the Fee Negotiation Committee to resolve this issue. These were as follows:[12]

- Historic. This approach, proposed by the OPA, would ensure that pharmacists remuneration from the dispensing fee and the "spread" on drug prices available in the past (i.e., prior to the passage of the 1986 legislation) would be rolled into one new dispensing fee. By guaranteeing pharmacists their previous total remuneration in this way, it was argued undue financial hardship would be minimised as the effects of the ODB Act, 1986 and the Prescription Drug Cost Regulation Act, 1986 began to be felt -- the elimination of the spread and the dispense as written policy.

- Extrapolation. Under this approach some previous level of the dispensing fee would be deemed as appropriate. The CPI or some variant reflecting the major cost components of pharmacy would be then applied to this base level to derive the fee level for (say) 1987.

- Interjurisdictional comparison. The appropriate fee would be that prevailing in other jurisdictions whether in Canada or other countries. It was suggested some adjustments or corrections -- relating to, for example, volume of business -- might be necessary to ensure proper comparisons. Correction would also be necessary to take into account the average length of treatment per fee.

- Market. Under this approach some weighted average of the dispensing fees in the non-ODB Ontario drug market would be used. These could include the usual and customary fee, which must be posted inside every pharmacy under section 6 (4) of the Prescription Drug Cost Regulation Act, 1986 and that established by third-party carriers such as Green Shield. However, it should be noted the Green Shield is based upon the usual and customary fee charged by the pharmacist.

- Economic or rational cost build-up. The final approach, suggested by the OPA, is essentially to estimate the costs of dispensing. The major cost items of pharmacy would be

determined and expressed on a store and per prescription basis.

In deciding between these various alternative approaches the Chairman suggested that the basic or overarching principle would be "to determine as objectively as possible the actual expenses associated with dispensing prescriptions including a reasonable rate of return for capital..." (Gordon, 1987, p. 3). The Chairman, in applying this principle, rejected the first three approaches without reason, discarded the fourth on the grounds that different dispensing fees in the non-ODB market signalled the existence of market imperfections and accepted the last approach. This approach was favoured because, "in principle it addresses the objective of determining a fee which covers the actual cost of dispensing a prescription" (Gordon, 1987, p. 5).

Implementation

The Chairman's report of 1987 has set the framework within which future negotiations of the dispensing fee have taken place. In that report the Chairman listed four major cost components of pharmacy,

> 1) wages of the Pharmacist and Assistant Pharmacist directly related to dispensing 2) the cost of occupancy including rent, utilities and maintenance 3) other costs such as: administration, taxes, licenses, professional services, insurance, marketing, miscellaneous, etc. 4) a reasonable rate of return for the capital invested in

> fixed assets, receivables, and inventory. (Gordon, 1987, p. 6).

with 15 per cent suggested as a reasonable rate of return. Using this approach, available cost information and based on a pharmacy dispensing 40,000 prescriptions a year, the Chairman recommended a fee of $5.95. In 1988 the Chairman's recommended fee was $6.22, "made up of a base of $5.95..., plus an increase of 4.5 per cent." This latter figure "is based primarily on government guidelines for increases in other sectors which are dominated by government expenditures" (Gordon, 1988, p. 3).

While the Chairman's report set out an acceptable framework to both the Ministry and the OPA within which the dispensing fee is to be determined, much remains to be done to flesh it out. Central to the implementation or use of this framework is the completion of a cost study. In the words of the Chairman,

> The objective of a joint cost study should be to determine a reasonable and agreed upon estimate of the cost of dispensing a prescription in an average sized (volume) pharmacy operating in Ontario. This agreed upon cost of dispensing should not necessarily be the final dispensing fee but rather the basis for negotiations between the Ministry of Health and the Ontario Pharmacists' Association which would be the ultimate determinant of the dispensing fee. The final fee as opposed to the dispensing cost may contain elements of political policy in addition to simple reimbursement for services provided. It should not be the intent of the joint cost study to be involved directly in political policy but rather to determine a reasonable estimate of the cost of dispensing. (Gordon, 1988, p. 4).

The Chairman does not elaborate on the somewhat nebulous phrase "elements of political policy." One interpretation is that it refers to the relative bargaining strengths of the Ministry of Health and the OPA.

The Chairman called for a joint cost study in his 1987 and 1988 reports to the FNC. It might also be noted, parenthetically, that the Chairman, in a different context, made essentially the same suggestion some years earlier (Gordon, 1984, pp. 81-82). To date, however, negotiations between the Ministry and the OPA have failed to result in an agreed upon approach to conducting a joint cost study.[13] Differences in view about appropriate benchmarks, methods and study objectives seem to be barring the way to agreement.[14] Thus three years after the passage of the ODB, Act 1986 and five years after the Chairman of the FNC first made his suggestions as to the determination of the dispensing fee, the problem seems as intractable as ever.[15]

AN EVALUATION

In evaluating the level and process by which the dispensing fee is set initially attention will be paid to more tractable issues before switching to more difficult issues. Thus, the first two issues discussed concern the success of the dispense as written policy and whether the private sector is paying a higher fee because of the success of the public sector in limiting fee

increases. Green Shield (1988, p. 10), for example, state that the lack of an ODB fee increase "has caused pharmacists to recover their perceived income loss of fee income in ODB dispensing by an offsetting increase in posted fees for private sector dispensing". This sets the stage for tackling the adequacy of the present system of determining the dispensing fee.

Dispense Entire Quantity as Written

A physician in writing a prescription will typically write it for a course of treatment which will depend upon the total quantity prescribed and the daily dosage. In some instances it will reflect, however, a readily available or convenient package size. Under the Participation Agreement between the Pharmacist and the Ministry of Health prior to 1986 it was "agreed that the quantity of a drug to be provided... shall be sufficient for one month's course of treatment, except where the course of treatment is less than one month, in which case the quantity provided shall be sufficient for the course of treatment." In the Formulary certain drugs, designated by a circle containing a number one, would receive only one dispensing fee per months supply per patient even if the pharmacist submitted more than one claim per patient per drug. These so called circle one drugs were generally for longer term therapies, where at least one month's supply could be safely prescribed.[16]

Under the ODB Act, 1986 the circle one designation disappeared from the Formulary and the Participation Agreement contained no reference to the length of supply of the course of treatment.[17] Instead, the Act and the regulations passed pursuant to it introduced a dispense as written policy. In other words, if a prescription was for 90 days then instead of the patient visiting the pharmacist three times for a month's supply each time with three separate dispensing fee charged to the ODB, the patient would make one visit for 90 days supply and the ODB would be billed one dispensing fee. Equally, of course, if the physician decided to write two fifteen days supply for a former circle one drug then the ODB would pay two, not one fee. As noted above, certain safeguards were built in to prevent excessive quantities being dispensed.

In a carefully conducted 1981 study undertaken jointly for the Ministry of Health and the OPA, Woods Gordon addressed the issue of the impact of introducing a dispense as written policy. Both short and longer impacts were considered. The former effect -- 4 to 6 months -- was predicted to lead to a reduction in overall ODB claims of 3.3 per cent, where for each claim one dispensing fee is paid. The longer run effect "will be influenced by adjustments to physician prescribing habits which are anticipated in response to changes [i.e., dispense as written] in the ODB plan.[18] The experience of British Columbia Pharmacare was taken as a benchmark for the longer term impact, since this program

reimbursed up to 100 days supply. Based on a comparison of average quantities dispensed per claim for 100 drugs in B.C. and Ontario, Woods Gordon (1981, p. 6) estimated, "a net reduction in ODB claims of 14% is expected over a one to two year period."

In order to estimate the impact of the dispense as written policy in Ontario a sample of 40 high volume circle one drugs were selected.[19] Data for the month of March for the years 1986 to 1989 was obtained from ODB.[20] In March 1986 these forty drugs accounted for approximately one-third of all ODB claims. The average quantity per claim and number of claims per drug were estimated. If Woods Gordon is correct then the number of claims should decrease and average quantity increase. However, their estimate is probably a lower bound -- the upper bound being a threefold increase in average quantity and a two-thirds decrease in the number of claims. This assumes, of course, that 100 day supply is appropriate in all cases. It may not be.

The number of claims and average quantity per claim are presented in Table 3-1 for the sample of forty drugs. The mean and standard deviation are also presented. In assessing the impact of the dispense as written policy it was decided to concentrate on the average quantity per claim rather than the number of claims. As an inspection of the table shows many of the drugs experienced quite dramatic changes in the number of claims so that it is difficult to suggest that this was attributable to

the dispense as written policy. Furthermore, these changes are more dramatic the longer the time period, thus obscuring the longer run impact predicted by the Woods Gordon study.

In general average quantity showed little change (Table 3-2). Indeed, if anything it decreased rather than increased. The sample average went from 107.8 in March 1986 to 106.2 in March 1987 to 106.3 in March 1988. The difference was not statistically significant at the .01 level. One difficulty of using average quantity is that for some drugs the average quantity is very large and that changes for these drugs may overwhelm changes in those drugs where only one or two pills are consumed a day. To take this into account percentage changes were considered. Again the results in Table 3-2 suggest little change, with average quantity increasing by only 2.1 per cent between March, 1989 and March, 1986. Thus we can conclude the dispense as written policy has had little measurable impact with respect to the 40 per cent of the Ontario drug market accounted for by ODB.

There are a number of reasons why the dispense as written policy has had little or no impact. First, the ODB policy of one dispensing fee per monthly course of treatment had been in effect since the mid 1970s and, with the growth in importance of the ODB in the Ontario market place, this may have influenced physicians to prescribe in such quantities. Thus, there may have been a certain amount of inertia to overcome. Second, the pharmacist has

little incentive to replace three dispensing fees with a single dispensing fee for dispensing the same amount of a drug.[21] Not only is there likely to be a direct loss of income from such a change, but also, the consumer is likely to visit the pharmacy less frequently. The pharmacist may thus lose indirect business on non-pharmacy items because of less frequent visits by consumers. Third, the ODB recipient, apart from the inconvenience of extra visits to the pharmacist, has no incentive to demand that (say) 100 days be supplied at one time. The consumer would appear to be ignorant of such a provision and the Ontario government made little attempt to inform ODB recipients of such a change. Even if aware, the consumer has little incentive, apart from convenience, since the ODB recipient pays nothing toward the drug cost hence there is no reason for the consumer to encourage either the physician to prescribe for longer periods or the pharmacist to dispense for such periods. Furthermore, since in the ODB market approximately 50 per cent of all new prescriptions are verbal[22] the patient may be unaware of the length of treatment prescribed and whether or the degree of compliance by the pharmacist.

Public Parsimony at Private Expense?

In the discussion in Chapter 1, one of the six criteria suggested to evaluate both government intervention in the marketplace in Ontario as well as possible solutions to problems, was consideration of the implications of public sector policy for

the private sector.[23] Much of the discussion of the record of government intervention in the marketplace in Chapter 2 suggested that in the 1980s the pharmacist's usual and customary fee was somewhat above the ODB fee. There was a suggestion the private sector fees were higher than public sector fees, in part at least, because of government policy. However, good data was not available to examine the extent of that differential. This has now changed. But before such data is examined, more attention is devoted to why dispensing fees may differ between the public and private sectors.

Markets for the same product or service may be priced differently at the same or adjacent locations, provided that is not profitable to arbitrage by buying in the cheap market and reselling in the higher priced market. In other words, prices may differ to the extent that this difference is just equal to cost of arbitrage. If this cost is minimal then prices will be the same for the given service or product. In the case at hand, the dispensing service, it is clear that differences can exist between the ODB and non-ODB market, since arbitrage is not possible. In other words, if the ODB fee is $6.22 and the non-ODB fee is $8.49 and ODB patient/consumer cannot resell his $6.22 fee to a Green Shield customer. Indeed, the Green Shield or Blue Cross consumer/patient probably does not even know the ODB dispensing fee, since it is not required to be posted in the pharmacy.

Furthermore, to the extent both have first dollar coverage there is no incentive for such arbitrage.

For different dispensing fees to exist between the ODB and non-ODB market not only must the market be segmented, but there must be differences in demand and supply. On the demand side, the Ministry of Health acts as a buyer of dispensing services for its client population. At the present time, it is concerned about the cost of the ODB and appears to be prepared to use its size in the market to bargain very hard with the OPA to keep ODB fees down.

In the non-ODB market there appear to be no such comparable groups to the Ministry in terms of size. Indeed, in one instance where a third party program did attempt to negotiate in a determined fashion to rectify the adverse effects of government intervention it was boycotted -- successfully -- by the pharmacists.[24] On the other hand, the Prescription Drug Cost Regulation Act, 1986 did attempt to inject an element of competition in the dispensing fee in the non-ODB market by requiring fee posting in the pharmacy for interchangeable drugs. Consumers certainly seem to be aware of the price (Ontario College of Pharmacists, 1988,pp. 6-7; and Ontario, Ministry of Health, 1987, p. 15). Although many non-ODB participants are covered by a drug plan of some sort, and hence may be insensitive to fee levels, at least a million residents of Ontario have no drug coverage at all and are likely to be price sensitive. (Gordon,

1984, p. 33). Even some of those covered by a drug plan may have an incentive to search for a lower cost pharmacy if a co-payment is required. Thus, on the demand side, it is not clear, a priori, whether prices will be the same or different between the two markets, since it may be that the element of competition introduced by PDCR Act, 1986 will be sufficient to match the bargaining strength of the Ministry.

On the supply side, it is difficult to estimate whether the costs of dispensing an ODB prescription are greater or less than a non-ODB prescription. The Ministry of Health argues that because the ODB market has proportionately more renewals than the non-ODB market and since a renewal is less costly to dispense, the ODB fee should be lower.[25] On the other hand, the ODB population being heavy drug users compared to the general population, is likely to require more professional services from the pharmacist and this will go some way toward offsetting the lower dispensing cost. Thus on the supply side it is difficult to come to any conclusion about what is to be expected.[26]

The ODB fee and the mean, median, low and high, "usual and customary" fee of the pharmacist are presented in Table 3-3 for selected dates in 1987, 1988, and 1989. These data demonstrate that the average or median fee is always above the ODB fee and that by July, 1989, the median usual and customary fee was 36 per cent above the ODB fee. Also worth noting is that some

pharmacies, at least, charged dispensing fees well below and above the ODB dispensing fee.

The data in Table 3-3 refer to the usual and customary fee of the pharmacy for interchangeable drugs in the non-ODB market. For non-interchangeable and single source drugs no guidelines or limits are set in legislation as to the fee that may be charged in this market. Sources in the Ministry of Health and the Ontario College of Pharmacists suggested that the fee for birth pills was typically below the posted usual and customary fee. A telephone survey of thirteen Ottawa pharmacists conducted in Nov. 1989, that included both chains and independents, confirmed this: while the usual and customary fee ranged from $6.75 to $9.49, the fee for birth pills ranged from $3.40 to $6.99, although not all pharmacies divulged the actual fee over the phone except to say it was lower.

The data in Table 3-3 suggests that the Ministry of Health as a bargainer is much more effective in obtaining, on average, lower dispensing fees than those prevalent in the private sector. Such a result is not altogether surprising. The public sector portion of the Ontario retail drug market is essentially a bilateral monopoly, between the government of Ontario and the OPA, which is enshrined in legislation. The outcome of this market, in terms of fee, depends upon the relative bargaining strengths of the two parties. The fee will be indeterminate between the maximum the

ODB is prepared to pay and the minimum that the OPA will accept. To the extent that the government has considerable power and influence, as well as a concern over the rising costs of the ODB, it is likely to bargain very hard to limit fee increases. Nevertheless, it seems unlikely that the current ODB fee is below cost.[27]

The private sector in the Ontario retail drug market resembles a monopolistically competitive market. Each pharmacy sets a dispensing fee depending upon a number of factors, such as its size, location, average quantity dispensed per fee, income level of clients, its level of efficiency, ratio of pharmacists to technicians, and the type of plan in which local consumers are enrolled. Given these conditions vary by location within the province, private sector fees are likely to vary. In terms of level, the lack of a bargaining agent such as the government, the various restrictions on media advertising of fee, and the extensive drug plan coverage outside ODB, the fact that, on average, the private sector fee is above the public sector fee is not surprising. It might be noted that in the government of Ontario's view, "there cannot be cost pressures in Pharmacy that justify such increases in [private sector] fees, particularly recognising the increased volume in prescriptions that are being generated" (Ontario, Ministry of Health, 1988b, p. 20). Thus, while the fees posting has undoubtedly made people more aware of fee levels, and may have resulted in a lower usual and customary

fee than there otherwise would be, the structure of the private and public segments of the Ontario retail drug market mean fee differences are likely to persist.

The above analysis suggests that if pharmacists are rational profit maximisers they will set (or attempt to) prices that achieve this objective. Therefore, unless there are some implicit side arrangements between the OPA and the government that result in higher fees in the private sector or a wider margin on drugs, the public sector fee setting policy does not result in higher private sector fees. However, there is no evidence such side arrangements exist. This does not mean, of course, that the government of Ontario cannot introduce legislation that would alter the structure of the private retail drug market with a view to fee reduction.

Determining the ODB Fee: Does It Works?

The approach to determining the ODB dispensing fee in Ontario is that pharmacists should be paid their dispensing costs, including a reasonable rate of return. This, of course, seems an eminently sensible approach. However, there are a number of difficulties with the cost-based method that, currently at least, is the preferred way of implementation. These difficulties can be broken down into two groups: first, the actual feasibility of estimating pharmacy dispensing costs; and secondly, just as important, what

meaning can be attached to such numbers. Each will be dealt with in turn.

Can Pharmacy Dispensing Costs be Estimated? There appear to be a number of conceptual and estimation problems in determining dispensing fees. The fact that the Ministry of Health and the Ontario Pharmacists' Association have been unsuccessful in resolving them suggests that they are indeed problems, perhaps intractable ones. They can be described as follows:[28]

- Objective of the Cost Study. Any cost study must have a well specified objective, which provides a focus for the study. The objective might include the dispensing costs per prescription for the representative pharmacy, where representative might refer to the mean or median-sized Ontario pharmacy. Furthermore, the objective would also have to carefully specify what was being purchased for the fee, just the dispensing function, or some professional services.

- Front store vs Pharmacy operators. A pharmacy is typically divided into a front store -- which sells general merchandise, including OTCs, to the public -- and a pharmacy operation that dispenses prescription drugs. How should certain joint costs such as the light, heating, rent, labour and so on be allocated? On a square foot cost basis, value of sales, or

profits? Furthermore, should the dispensary be allowed to subsidize the front store or vice versa?

- Price-spread. The pharmacist may receive remuneration in addition to the dispensing fee because of the price spread. How should this be measured and treated?

- Pharmacist's Roles. The pharmacist has a number of different roles: dispensing prescriptions; as an entrepreneur; and as a supplier of other professional services besides that of dispensing. Such roles may systematically vary by store type. In Ontario it would appear store type is distributed as follows in 1987/88:[29]

	%
Independent	62.4
Hospital	0.3
Franchise	14.5
Chain	22.7

How should remuneration and time allocated on each be assessed?

- Economies of scale. There is some evidence of scale economies in a pharmacy. This includes some empirical work (e.g., Cady, 1975, for the U.S., and Bureau of Industry Economics, 1985, for Australia) and the practice in Quebec

and formerly in Saskatchewan of paying a lower dispensing fee once a certain threshold level of prescription volume has been reached. In the case of Saskatchewan it was quite finely tuned. For example, up to June 30, 1987 the fee varied as follows.[30]

Pharmacy Prescription Volume Dispensed	Fee
0-15,000	$5.49
15,001-25,000	$5.23
25,000+	$4.80

Since in the case of Ontario there is a considerable variation in store size, this suggests that costs might vary across pharmacies. Table 3-4 provides data for August 1985 to January 1986; a similar distribution was observed in October 1988 to March 1989. Certainly the data on dispensing fees in the non-ODB market suggests such a variation exists (Table 3-3). Should such scale economies be taken into account and, if so, how?

- "Excessive" inventories. Changes -- the BAP + 10 per cent -- introduced in 1986 may have led to an increased inventories because of the incentive this change caused to purchase in larger volumes direct from the manufacturer or his agent, rather than in smaller more frequent volumes from the wholesaler. However, since manufacturer's compete on terms of

payment care must be taken in assessing the correct cost of inventories.[31] Should inventory costs be adjusted to take this into account and, if so, how?

- Technical Change. The advent of computers, it has been suggested, has significantly reduced the time taken to dispense a prescription — perhaps by as much as 50 per cent.[32] How should this and other such productivity enhancing factors be incorporated? Should those pharmacists that are slow to adopt such innovation receive a higher fee? If yes, why?

- Guaranteed Rate of Return. A rate of return is needed to estimate the return to assets. What is the appropriate level particularly in view of the government's undertaking to guarantee the return? How should the assets be valued? What is the appropriate depreciation rate?

- Differences in Costs. There are slightly over 2000 pharmacies in Ontario.[33] These are likely to differ in a number of respects which are likely to affect their costs. Is the variance or range of costs between pharmacies -- even in the same size class -- sufficiently high to suggest an average representative cost producer is of little usefulness? If the answer is yes is it feasible to design a survey that will be able to reflect the dispensing costs of the largest 100

stores, which were responsible 16.7 per cent of ODB claim payments between August 1985 and January 1986, and the smallest 173 stores, which were responsible for only 0.6 per cent of ODB claim payments (Table 3-4)?

These are clearly difficult problems to resolve.

The objective of the cost study could, for example, mean several things, each with its own problems and advantages. One objective would be to estimate dispensing costs for the average sized pharmacy, an approach used by the Chairman in his 1987 fee recommendation and followed by the OPA in its 1988 submission to the FNC. However, such an approach has a number of problems that need to be resolved. For example, the vast majority of prescription volume is dispensed in pharmacies greater than the average.[34] Given there are scale economies these pharmacies will be receiving fee in excess of their costs. One solution to such a problem is to select a different standard for the "representative" pharmacy. One such standard is the median-sized pharmacy. However, such a choice would adversely affect all those with costs higher than the median.[35] One way around this problem would be to introduce a tiered structure for the dispensing fee. Indeed, the Ministry suggested this in its 1987 submission to the FNC, so as to assist smaller pharmacies -- but to no avail. (Ontario, Ministry of Health, 1987, pp. 17-18). This latter approach requires careful measurement of the places where breaks or

discontinuities come in the costs by prescription volume by pharmacy. Thus the cost based survey has to be reliable and accurate. Even so in such a large and varied market place as Ontario there may still be considerable variation within particular size category.

One difficulty, it could argued, with an objective specified only in terms of dispensing fee is that little attention is paid to the professional service component of a pharmacist's activities. The greater the emphasis on the dispensing fee the more likely the pharmacist is to hire pharmacy technicians and the quality of service may decline. However, while the dispensing function is easy to monitor, this is much less true of professional services. One solution might be a schedule of fees that varied with the level and quality of service. However, actually estimating the costs of such a schedule would be difficult.

To date we have assumed all the costs can be measured and assigned between pharmacy and non-pharmacy operations. Suppose, however, as seems likely, that mistakes will be made in cost estimation. This could not only lead to hardship -- too "low" a dispensing fee -- but also distort the choices pharmacists and pharmacy owners make with respect to location, prescription volume and so on. For example, the dispensing fee for a certain prescription volume might be too "high", thus encouraging pharmacy

sizes to grow purely because of this administrative "mistake". Furthermore, once this fee has been fixed and pharmacists expand, trying to reduce the fee will likely prove next to impossible.

Many of the objections raised here are hypothetical in the sense that there is not an agreed upon cost-study. Reference might thus be made to a situation which in some respects is similar, the cost of production systems currently in place in Canada's supply managed agricultural products -- milk, eggs, turkeys poultry. Similar in that there are lots of producers, some small, others large. The evidence is overwhelming that such policies have resulted in prices that exceed substantially costs of production as well as leading to a number of other distortions.[36] For example, one recent report found that such schemes resulted in chicken prices, over a five year period, were 40 per cent higher in Canada than the U.S., while turkey's were higher by 38 per cent.[37] One counter to this particular example is that the supply managed boards are dominated by producers, not disinterested citizens. However, there is a strong strand in the regulation literature that suggests even when an agency is not dominated by producers, it will still reflect the interests of the regulated.[38]

<u>What do the cost numbers mean</u>? The second part of the discussion on a cost based method of determining pharmacy costs assesses the meaning of such numbers abstracting, for the moment, from the sorts of problems discussed immediately above. Measured costs

should reflect, ideally, for a given pharmacy size, the least cost method of dispensing the given prescription volume. Furthermore, the distribution of pharmacies by size and location should reflect the least cost method of supplying the total volume of prescriptions to Ontario's population, given its distribution, demands and so on. The measured cost levels may be higher than necessary for two reasons. The income levels of pharmacists and pharmacy owners is too "high"; and/or the system is inefficient -- too many resources are being devoted to produce the dispensing service.[39]

It is difficult to determine whether costs are too high, too low or just right. The usual measuring rod for economists and other public policy analysts is the level of costs that a well functioning competitive market system yields. The Ontario retail prescription drug market would not appear to approximate such a system. Indeed, the available evidence suggests the lack of effective competition, both in general and with respect to the dispensing fee.

On the general lack of competition under the heading, "Competitive Behaviour in Ontario's Prescription Market," Gordon (1984, pp. 58-9) comments,

> In the Commission's view, and, we believe, in the view of at least some of the system participants, the fundamental structural problems of the current programmes and policies are the singular lack of effective competition throughout the retail prescription market and, in those instances when

> some competition exists, the barriers preventing the benefits of such competition from being passed on to consumers. In short, while some elements of the present structure promote competition, other elements hinder it. The elements which hinder it are stronger than those which promote it -- thus, the overriding objective of reasonable prices for prescription drug products and services is not achieved to an acceptable level.

On the dispensing fee, in particular, Gordon (1984, pp. 47-48) comments as follows with respect to the non-ODB portion of the market:

> The equally serious aspect of this use of the marketplace fee is the remarkable lack of competition among pharmacies. With only negligible consumer awareness that part of the price paid for prescriptions is a dispensing fee, and with strong reluctance on the part of pharmacists to provide such information, it is difficult to see how the marketplace fee represents anything other than a pharmacy's view of the fee it should receive, rather than a fee acceptable to both the providers and receivers of pharmacy professional services: The marketplace fee in no way reflects any of the competitive behaviour which is normally associated with the market mechanism.

A year later the federal Commission of Inquiry on the Pharmaceutical Industry (1985, pp. 408-10) came to essentially the same conclusion concerning pharmacy Canada-wide.

While it is true that some changes were made in Prescription Drug Cost Regulation Act, 1986 concerning posting of dispensing fee and the breaking down of the price of a prescription with the dispensing fee and drug cost it seems, valuable through these

steps are, they would not be sufficient to result in effective competition in the prescription drug market of Ontario.

An alternative method to determine whether the level of costs are too high or the returns "excessive" is to look at indicators such as the level of compensation paid to pharmacists in other jurisdictions, in similar retail operations and whether entry takes place or not. There is supporting evidence using this approach that pharmacist costs and returns are "high". Some of this is academic.[40] Much, however, may be found in the Ministry of Health's brief to the FNC (Ontario, Ministry of Health, 1988b). For example:

- Ontario pharmacies sales have increased much faster than all retail operations Canada-wide 1980 to 1987; (ibid., p. 13)

- "over the period 1981-1985, Ontario pharmacies have achieved proportionally higher levels of net profits, return on sales and had higher owner/manager salaries than for comparable pharmacies in other provinces." (Ibid., p. 13)

- a rise in the number of pharmacies in Ontario from 1,681 in 1979/80 to 2,054 in 1987/88, with an increase, on average, of the number of ODB claims per pharmacy from 9,370 in 1979/80 to 14,902 in 1987/88 (ibid., Appendix 3, n.p.) suggests pharmacy is an attractive industry to enter. More recent figures

suggest that this upward trend in numbers and volume has not abated: between 1987/88 and 1988/89 the number of pharmacies increased by 1.1 per cent and the average number of ODB claims per pharmacy by 5.6 per cent (data supplied by the Ministry of Health).

The OPA in its briefs to the FNC did not attempt to refute the Ministry's case, but instead presented cost data for the average sized pharmacy.

It is difficult to argue that pharmacists and their operators should not receive remuneration sufficient to cover their costs, including a reasonable rate of return. However, the proposed cost based method of realising this goal has a number of practical and conceptual difficulties. Furthermore, if the view that costs and prices are currently higher than they "need" be is correct -- and the evidence points in that direction -- then any attempt to use the existing cost structure to determine fees will simply validate and legitimize those inefficiencies and returns.[41] As a result cost containment will be much harder to achieve, particularly as more entry takes place. One of the reasons for these inefficiencies is the lack of a competitive market at the retail level. The evidence of the lack of success of the dispense as written is partial confirmation of this view as well as the price differential between the ODB and non-ODB market.

OPTIONS AND ALTERNATIVES

Introduction

The discussion of options and alternatives to the present method of determining the ODB dispensing fee builds upon the analysis and results of both the previous section and Chapter 2. That suggested that there were good reasons why the whole or entire quantity prescribed should be dispensed at one time, subject, of course, to certain safeguards in the interests of health care. The available evidence suggests that the 1986 legislation enacting that has had little effect. Thus options and alternatives to realise this valid policy goal are presented and discussed.

A number of criticisms were made of the present system of determining the dispensing fee in Ontario, particularly for the ODB, in the previous section. In order to examine whether better alternatives are available, we adopt a two pronged approach. First, the concept of the dispensing fee as an appropriate model is retained, but different methods or mechanisms are evaluated: a competitive market; franchise/auction; regulation; and negotiation (i.e., the present system) -- Figure 3-2. Second, there are different concepts or models of compensating the pharmacist to the dispensing fee. These include mail order, capitation, salaried employees of government and so on. In the discussion here only

capitation is discussed. However, as with the fee, the capitation rate can be set in a number of ways (Figure 3-2).

In considering which direction policy should go with respect to the method of determining the dispensing fee several considerations have to be taken into account, in addition to the factors noted in Chapter 1. The overall objective of the fee should be, as at present, to reimburse the pharmacist for his/her services, including a reasonable rate of return on capital. In meeting these objectives the approach selected should overcome the disadvantages of the present cost-based system, which is not only increasingly administratively complex and cumbersome but also economically inefficient and costly -- faults more usually linked with U.S. than Canadian health care. Change necessarily involves risks, since new systems or approaches may tend to lead to unforseen problems and difficulties. The more radical the departure the more likely, other things equal, these problems are likely to be. As such the payoff needs to highter. This counsels for marginal changes and for those which follow models or approaches where there is some evidence of success as well as applicability to Ontario.

How Can the Dispense the Entire Quantity Policy be Successfully Implemented?

The discussion in the previous section suggested three reasons why larger quantities were not dispensed per ODB claim for maintenance therapies:

- physician inertia;
- little incentive for pharmacist; and
- lack of knowledge of policy by consumer/patient.

All of these problems can, in theory, be relatively easily rectified by the Ministry of Health, not only with respect to the ODB, but to the extent that the problem occurs in the non-ODB, this market segment would also benefit. The solutions would be along the following lines:

- an information campaign informing physicians of the change, pointing out that the objective is to increase quantity dispensed, where appropriate, so that, for example, patients, particularly older persons with limited mobility, do not have to visit the pharmacist with undue frequency. Of course, if good medical practice requires smaller more frequent

prescriptions or refills, then the physician would be entitled to make that judgement. However, where physicians, compared to their peers, prescribed very small (or large) quantities then such instances could be examined.

- require pharmacists pursuant to new regulations, under either the ODB Act, 1986 or the PDCR Act, 1986, to display, in a prominent place, a sign saying that the whole quantity prescribed is to be dispensed at one time unless, in the pharmacist's professional judgement, this should not be done. Furthermore, the sign should also state that a quantity sufficient for up to a 100 day course of treatment can be dispensed per dispensing fee. For ODB claims where the entire quantity was not dispensed and no professional reason was forthcoming an automatic fine could be imposed.[42]

- ODB recipients and non-ODB patients/consumers could be informed of the dispense as written policy together with its justification. In the case of ODB recipients, this could be done directly. For example, when each senior citizen is mailed an ODB card, the information could be imparted; for non-ODB patient/consumers via an advertising campaign as well as an information display in each parmacy noted immediately above.

None of these seemingly sensible measures were taken when Bills 54 and 55 became law.

In order to estimate the impact of a successful dispense as written policy, and thus whether it is worth the Ministry of Health embarking on the sort of information campaign outlined above, a benchmark is needed. For this purpose the experience of senior citizens under B.C. Pharmacare program for the first quarter of 1986 and 1987 was selected because:

- this has been used earlier as an appropriate benchmark in the Woods Gordon (1981) study conducted for the Ontario Ministry of Health and the Ontario Pharmacists' Association.

- B.C. Pharmacare in the first quarter of 1986 and 1987, in some important respects, resembled the ODB in that senior citizens received all their medication and dispensing fee services free of charge. However, B.C. Pharmacare always reimbursed for up to 100 days for one dispensing fee (even for the patient/consumer on welfare).

- the province conducts both Drug Utilization Reviews and competency tests for pharmacists neither of which exist in Ontario so the standard of prescribing and dispensing with respect to quantity should be good.

These conditions should ensure that B.C. is an appropriate benchmark.

In order to measure the impact of a successful dispense as written policy in Ontario, data on average quantity dispensed was obtained from B.C. Pharmacare for the sample of 40 high volume drugs used earlier to evaluate the impact of Bill 54 (Table 3-1). For 35 of the sample of 40, the ratio of the average quantity dispensed per claim in B.C. to the average quantity dispensed per claim in Ontario was estimated.[43] The mean and standard deviation of this ratio for 1986 and 1987 are presented in Table 3-5 -- we defer the discussion of the 1988 and 1989 results below.

Table 3-5 shows quite clearly that B.C. had, in both 1986 and 1987, much larger average quantity dispensed per claim than in Ontario - on average nearly 50 per cent. Thus, if Ontario could obtain the same quantities as B.C. for these 35 drugs total claims would fall by one third.[44] In Ontario approximately 70 per cent of claims are for maintenance therapies. If the results of the 35 drugs could be generalised to all maintenance drugs, the ODB would experience about a 20 per cent reduction in claims.[45] For 1987/88, this would have been worth $36.2 million in reduced claims, given that total fees in 1987/88 was $180.9 million (Table 1-5).[46] These sort of savings suggest an information campaign to promote dispense as written, combined with careful

monitoring to ensure that drug wastage does not increase, could pay handsome dividends for the Ontario government.

The Appropriate Role of the Pharmacist

In the earlier part of this chapter the various roles of the pharmacist -- as a dispenser of drugs, as a provider of professional services, and as an entrepreneur -- were outlined. The dispensing and entrepreneurial role seemed, albeit on somewhat tentative evidence, the most prominent of the roles. Before we discuss the method of setting the dispensing fee some discussion of the appropriate role of the pharmacists is needed, no matter how brief and cursory.

The pharmacist is a trained professional with, potentially at least, the ability to play an important role in the health care system. At the present time, it could be argued, that these talents are being underutilized. At the same time there is considerable concern that appropriate drug therapy not always being followed. The Medical Reform Group of Ontario (1988), for example, after an exhaustive review of the literature, concluded:

> However, even after admitting that information is lacking, it still seems clear that in a number of areas Canadian physician prescribing leaves much to be desired: certain drugs or classes of drugs, such as antibiotics, cimetidine, and psychotropics are inappropriately prescribed in a significant percentage of cases. In particular, there is strong evidence to suggest that psychotropics are greatly overprescribed to both the elderly and to women... Too liberal prescribing of benzodiazepines is probably the main factor in their frequent

> use in overdose attempts. Similarly, overprescribing to the elderly is probably linked to the high rate of adverse drug reactions of this age group and in one case, these reactions accounted for 20 per cent of admissions to a geriatrics ward. Finally, 15-30 per cent of hospital patients suffer adverse drug reactions. While it is not proven how many of those are the result of misprescribing all the other evidence on the appropriateness of in-hospital prescribing would indicate that misprescribing must be considered a major cause (ibid., p. 49-50).

The Pharmaceutical Inquiry of Ontario (1989a) has made a number of suggestions for improving prescribing habits via Drug Utilization Reviews and distribution of a publication entitled "Choice of Medications - 1990". The issue of the appropriate role of the pharmacist was addressed initially by the circulation of a discussion paper by the Inquiry on the role of the pharmacist in August 1989.

A number of suggestions were put forward in this paper as well as in submissions to the inquiry as to how pharmacists may play an important role in improving drug therapy.[47] One suggestion is the use patient medication files that include all the drugs the patient is taking and has taken over a recent period, the prescriber and dispensing pharmacy as well as the indication. The data would be then linked to a program that would assess the patient's drug regimen with respect to

- adverse drug interactions
- drug appropriateness given the indication

- recommended dosage used
- length of treatment

The provincial College of Pharmacists and College of Physicians and Surgeons, in collaboration with the Ministry of Health and Federal Department of Health and Welfare would design such a program and distribute it at nominal cost. The involvement of both Colleges is necessary given the professional sensitivities involved. The pharmacist's role would be to monitor the patient's drug regimen and inform the physician and patient as appropriate of any problems. Initially attention might be confined to those drugs most frequently prescribed or where research, such as that cited by the Medical Reform Group, indicated misprescribing.

This suggested role for the pharmacist is to some extent already in place. Many pharmacists already maintain patient medication profiles. A useful extension is the idea of the "Smart Card," which stores much of the patient information and can be plugged into a pharmacist's computer with the program concerning any interactions and so on. The advantage of the Smart Card is that the patient/consumer is free to move from pharmacist to pharmacist. On the other hand, if all pharmacists and a common method of recording patient medication files and a unique identifier on each patient/consumer then all this data could be fed into a central computer, perhaps run by the Ministry of Health. However, the adoption of any such system would have to

build in procedural safeguards to ensure that the confidential information collected and stored was confined to uses related to proper medical practice and not disseminated to other agencies or levels of government. This might argue for any such computer to be maintained by an arm's length agency.

There are good reasons for the government to support such measures:

- their client ODB population is a heavy consumer of drugs and as the quotation from the Medical Reform Group showed this group is often at risk. As Table 3-6 shows, ODB beneficiaries frequently consume more than one drug a month. Indeed, some beneficiaries have over 100 claims a month!

- the Ministry of Health has overall responsibility for health care in Ontario. To the extent that proper or better medication prescribed and dispensed reduces hospital admissions it will ensure that demand is reduced and existing beds are allocated to yield a better benefit/cost ratio.

- the Ministry of Health's emphasis on health outcomes is consistent with such monitoring.

Hence it is proposed that this enhanced role be considered for pharmacists in Ontario.

Alternative Methods of Setting the Dispensing Fee

In this section we consider the advantages and disadvantages of several different ways of determining the dispensing fee. These vary from a competitive market based system to a regulatory approach.

A Competitive Retail Market. One system which would meet many, if not all, of the criteria set out in Chapter 1, is a dispensing fee set on the basis of a competitive market. This system would have three central elements:

1) All ODB recipients, except those on general welfare, family benefits and GAINS -- the Guaranteed Annual Income System for Ontario Senior Citizens, would pay 75 per cent of the dispensing fee for prescription drugs direct to the pharmacist. (The remaining 25 per cent would be collected from the ODB.) However, once the persons total expenditure on such fees exceeded $125.00, in any calendar year, the ODB would automatically mail the difference to the consumer/patient on a monthly basis for amounts in excess of $20.00

2) Each pharmacist would set either a single dispensing fee or a schedule of fees reflecting different professional services in addition to the basic dispensing fee plus any compulsory services required by the College of Pharmacists such as keeping patient medication files applicable to all sections of the market. In the previous section the keeping and retention of patient medication files was suggested, perhaps in conjunction with other professional bodies. This fee could be disclosed to the public through the electronic and print media. The fee would cover a maximum course of treatment of up to 100 days. In addition, any professional services the pharmacist might offer such as patient counselling, educational literature and so on could be also so communicated, together with the appropriate fee.

3) The ODB would monitor the fees set by the pharmacist. Indeed, the fee would have to be registered with the ODB (or College as at present). There would be limits on the fee that would be permitted, which would not exceed (say) 15 or 25 per cent of the weighted mean. Each pharmacy fee would be weighted by the proportion of total prescriptions (or claims) it accounted for. The average fee would <u>not</u> be made public.

Each feature is discussed in turn.

The first condition is designed to create a cost-conscious buyer, with an incentive to search for pharmacies offering the right combination of price, dispensing and professional services. In other words, for a given combination the consumer/patient would search for the least cost source of supply up to the point at which the extra search costs offset the lower fee. It will also encourage the dispense as written policy. In B.C., when the copayment was introduced there was a marked shift in the quantity dispensed per claim (Table 3-5).

One of the problems is, of course, that too large quantities are dispensed and the expensive medication wasted. However, a trial scheme at four pharmacies in B.C. suggested that this may not be a serious problem. Under the scheme, which only applied to drugs known to have a high incidence of side effects and/or low tolerance, the patient/consumer received a trial two week supply. B.C. Pharmacare paid the fee and drug cost. If the drug worked satisfactorily then the patient/consumer would receive the balance of the original prescription, pay 75 per cent of the fee, with the B.C. Pharmacare paying for the remaining 25 per cent plus the drug cost. Under the scheme the increased expenditure on fees has to be traded off against unused medication. According to the Pharmacare, the savings in unused drugs did not offset the extra fee expenditure so the scheme will probably not be extended to all of B.C.

The proposed ODB recipient's contribution is to be a based percentage of the fee and not a fixed dollar amount. In the latter case, as at present, there is no incentive for the ODB recipient to search for a lower cost pharmacist since the amount paid (whether $3.00 or $0.00) will remain the same irrespective of the pharmacy selected. Thus a percentage of copayment provides the correct incentive. Furthermore by limiting the copayment to a percentage rather than up to $x, the total fee is constrained. If the patient only pays up to $4.00 then a mechanism still has to be introduced to determine the fee above $4.00.

In selecting the copayment percentage this has to be high enough to provide an incentive for the ODB recipient to switch to a pharmacy offering for the particular package of services required at the best price. The 75 per cent copayment is purely arbitrary: in B.C. it is 75 per cent; and in Newfoundland seniors pay all the fee. If anything selecting a higher percentage is probably, initially at least, a preferable course since it is easier to lower than raise the copayment percentage. The other objective of a partial copayment is to ensure that the government retains an interest in fee levels and in monitoring the degree of competition in the marketplace.

The purpose of the copayment is to create a competitive market under which the dispensing fee reflects costs, not to penalize ODB recipients and jeopardise the access criteria. However, as noted

in Chapter 2, given the access objectives of the ODB, it is excessively generous. Hence it should be possible to introduce a competitive market and not refund all payments made by recipients of ODB. In particular, only the poorest groups would be exempt from any copayment. Even for those that remain there would be a ceiling, beyond which the government would pay 100 per cent. (It could, of course, be graduated so that the expenditure between $100 and $200 the government will pay 70 per cent and, above $200, 100 per cent.) This is to protect people from potentially very high drug costs -- catastrophic if you will. Several provinces which have some form of patient/consumer copayment (either on the fee or the total cost of a prescription) have a ceiling (Anderson, 1989). However, in order to maintain cost consciousness of consumers and to minimize paper burden, once the $125.00 ceiling has been passed the government automatically will reimburse the consumer.

Condition 2 is meant to remove the present constraints that bar pharmacists from communicating to consumers their dispensing fees and professional services. There seems little or no justification for the present bars on disclosure of dispensing fee and professional services. A series of reports on professional regulation in Canada (Muzondo and Pazderka, 1979), Ontario (Trebilcock et al., 1979, Leal et al., 1980) and Quebec (Quebec, Office des Professions du Québec, 1977) in the late 1970's and early 1980's argued that such regulation does little to protect

consumer quality. Furthermore, studies in the U.S. of some jurisdictions that allowed and did not allow advertising of some medical services demonstrated no difference in quality between such jurisdictions but there were price differences (Cady, 1975 and 1976 for pharmacy, Bond et al., 1980 on optometry). Indeed since the pharmacist could communicate to the public the range of professional services offered this could lead to greater product differentiation and reward of pharmacists who provide good service.

This seems a much preferable solution than the mandating of the provision of services suggested by the discussion paper prepared for the Pharmaceutical Inquiry of Ontario (1989b). Such mandated services would include that "all pharmacies in Ontario have a relatively private and comfortable consultation area where patients can discuss their medication with a pharmacist", (ibid., pp. 8-9) and also "a professional products area adjacent to or contiguous with the dispensary, where all non-prescription drugs would be located" (ibid., p. 9). These are likely to result in an increase in costs with no certainly that the benefits will be there. Much better to let the consumer be the judge than mandating service provision.

On the issue of price disclosure of dispensing and professional services, one of Canada's foremost health economists has written,

> The marketplace cannot be relied upon to weed out the snake oil salesman because of, inter alia, the technical difficulty of establishing cause and effect in the relation of drugs to health care. But the same logic does not justify interfering with a consumer's decision to use a pharmacy with or without, e.g., delivery services. And if it does not, then it cannot justify preventing pharmacies from adjusting their relative prices to reflect their different service packages, and making these price differentials known to consumers. Only in this way can consumers indicate whether they consider the extra services worth their extra costs. (Evans and Williamson, 1978, pp. 64-65).

This does not mean, of course, that the College of Pharmacists ought not to develop guidelines for new services and pharmacy layout, but leave it to the discretion of individual pharmacies to select whether or not to offer the service.

The third condition reflects the central role of the ODB as a payer and monitor of the system. The upper bound placed on the fee is designed to prevent local pharmacy monopoly from exploiting his position unduly as well as allowing some range in the service/price combination. Some might be concerned about cut-throat competition but as Table 3-3 shows the current lowest usual and customary fee is 60 per cent lower than the median fee.

The competitive retail market system has a reasonable chance of working and meeting the various criteria outlined above. It represents a continuation of the emphasis in reports such as Bailey and Gordon as well as the tentative steps taken in PDCR Act, 1986 on the need for greater consumer participation and

competition. It is administrationaly feasible and fairly straightforward. It will promote economic efficiency and has been specifically crafted to take into account access considerations. Furthermore there is a working model of the sort of competitive market based system proposed here in the B.C. Pharmacare Programme. The major difference with that system and the proposal here is condition 2 with respect to advertising.

B. C. moved away in 1977 from a negotiated dispensing fee because of the sort of difficulties noted above that occur in Ontario. (Bureau of Industry Economics, 1985, p. 44). It introduced a system under which each pharmacist set its own usual and customary dispensing fee, although there were and are similar restrictions on disclosure of fee and professional services as in Ontario. There were limits to the range the fee could fall similar to those in (2) above. B.C. is the only province in Canada to have a fee set by the marketplace. All the others go through protracted negotiations similar to Ontario. Indeed, this would appear to be a universal problem that plagues many countries.

Even in a marketplace fee such as that in B.C. there have been problems. In particular, in the mid 1980's concern was felt that average quantities dispensed were too low, even though up to 100 days could be supplied for one fee, and that the marketplace could be made more competitive. To achieve these two objectives the province introduced a copayment scheme which our conditions (1) to

(3) are modelled upon. The impact seems to have been to increase average quantity (Table 3-5) as well as holding the dispensing fee at the $6.00 range. Furthermore, this change would not appear to have led to reduced consumption of drugs: "the number of prescriptions has declined while the average quantity and total quantity has increased... The total quantities of chronic therapy has increased consistent with population growth" (Marcantonio, 1989, p. 1).

Franchise Via Auction. In the proposal put forward here a competitive marketplace is established by making the patient responsible for seeking low cost pharmacies and giving the pharmacist a means and incentive of communicating his fee with the consumer. An alternative to this would be for the government to auction off the right to supply ODB patients in a particular area. Basically this system would be organized something along the following lines:

1) Ontario would be divided into a series of geographic areas each of which would be supplied by one pharmacy. The size of the area would depend upon such factors as: the population density; the size and number of existing pharmacies; the percentage of the population that were ODB recipients; available scale economies; and so on.

2) Every six months (or a year or whatever period is deemed appropriate) a competition would be held for the right to supply the geographic area with ODB prescription services. The winner would be the qualified bidder with the lowest dispensing fee.

This auction system has many of the same characteristics as the competitive market copayment scheme. There are a number of important differences, however.

The administrative complexity of the auction system is likely to be greater than the competitive market system. The definition of geographic areas is likely to be a very difficult task. Complex tradeoffs have to be made. The larger geographic areas, other things equal, the greater size of the pharmacy that will serve the area. Given the presence of such economies this means that a lower fee will result than if the area were subdivided into a series of smaller areas. However, the larger the area the greater the distance that a recipient would have to travel, thus effectively raising the price to the consumer. With a competitive market based system consumers could make their own choice as to the appropriate trade-off between not only distance travelled but also quality of service and the fee. Since these preferences are likely to differ, a uniform auction system may lower welfare. Furthermore, there are likely to be recontracting problems. Pharmacists rely to a considerable degree on ODB business. If an

auction system is set up loosing pharmacies are likely to experience considerable difficulty surviving and may indeed go bankrupt. This could lead to the domination of each area by one large pharmacy and this would be the only bidder after several rounds of the auction. Thus, monopoly problems could occur.

Regulation. The other alternatives to a competitive or auction systems are regulation or negotiation, where regulation would be based upon the traditional public utility cost of production approach. The evaluation of the present system has discussed both of these approaches and found them wanting. In the case of regulation none of the theoretical arguments for its use seem to apply with respect to the fee. Indeed, the trend in recent years has been a trend toward deregulation of structurally competitive industries such as trucking, airlines and so on. Pharmacy would appear to fit in such category.

Alternative Concepts of How the Pharmacist Should be Reimbursed

An alternative approach or method to fixing the level of compensation for the pharmacist would be capitation.[48] Under capitation the pharmacist receives a fixed payment per patient irrespective of the number of drugs dispensed. There might be different capitation levels depending upon the plan type within the ODB reflecting different utilisation rates. The rate could be per month or per year; the shorter period giving the

patient/consumer an opportunity to switch pharmacies. Capitation is practiced in some Canadian jurisdictions in care facilities.

The capitation rate could be set using a competitive marketplace, auction system, negotiation or regulation. All the discussions on the method of determining the fee as to the merits of each carry through to capitation. The advantage of the capitation approach, it is claimed, is that the pharmacists' motivation is less dominated by commercial concerns and more by health care concerns, since for a given capitation rate income will be unrelated to number of drugs dispensed. However, commercial concerns are not entirely lacking since the pharmacy may attempt to screen out heavy users of drugs. Furthermore, to the extent that capitation rates are linked to overall utilisation each pharmacist has an interest in keeping up such rates.

It could be argued that a properly functioning market in which there is price disclosure and notification of professional services will lead to the consumers selecting pharmacies which offer good service and counselling. Despite this, the capitation idea is an interesting suggestion. However, given the non-marginal nature of the change and by no means certain benefits this system would seem inappropriate at the present time. Nevertheless, given its touted advantages some pilot projects in a community setting might be a useful exercise to undertake.

CONCLUSION

This chapter has reviewed and evaluated the processes and methods by which the dispensing fee is set in Ontario, both in the public and private sector. Alternatives to the status quo have been evaluated. However, the chapter attempted to go beyond the narrow and confined domain of the dispensing fee and discussed the role of the pharmacist in terms of the professional services that could be offered and how the market could be structured to provide greater incentives for such services.

One of the concerns of the Ontario government is cost containment of the ODB. In Table 3-6 estimates are presented, for 1988/89, of what total ODB fee expenditure would have been under various assumptions. Everything is indexed relative to the actual ODB expenditures on fees in 1988/89. It is unclear where the market would have set the fee if the ODB did not negotiate the fee, so $8.00 was chosen as an indication of the upper limit. The remained of the table envisages various scenarios, all discussed above, that would impact on the level of expenditure. All make the strong other things equal assumption. More work is needed to refine the table so that the numbers, particularly for (5) and (6), should be regarded as very tentative.

The table shows that major reductions are certainly possible. Furthermore, given the above discussion the retail market would

get a more appropriate bundle of professional and dispensing services and the pharmacist would be rewarded for the services he provides under a competitive market place.

NOTES TO CHAPTER 3

1 For details, see ODB Act, 1986, section 6(1) and PDCR Act, 1986, section 7(3). In some instances a prescription drug may not have a BAP, while over the counter drugs are priced on a mark-up in lieu of a dispensing fee.

2 The discussion of the first two functions follows Pharmaceutical Inquiry of Ontario (1989b). See also Gorecki (1981, pp. 5-7) and Ontario Pharmacists' Association (1988), Third Position Paper.

3 These are the services singled out in section 2(2), 3(i) to (iii) of Ontario Regulation 691/86 under the Prescription Drug Cost Regulation Act, 1986.

4 After the ODB Act, 1987, it was reduced to little more than a page.

5 Nevertheless, the ODB Act, 1986 does allow, under section 7(3), the establishment of "classes of operators of pharmacies and provide for an amount payable in respect of each class." In a number of provinces, for example, the dispensing fee does fall after the pharmacy reaches a certain volume of prescriptions.

6 Ontario Regulation 698/86, sectors 8(2). It should be noted that for certain classes of beneficiaries under the ODB, such as these who are eligible for general assistance under the General Welfare Assistance Act, the province only pays for 35 days supply because the beneficiary qualifies on a monthly basis. See sector 8 of Ontario Regulation 698/86.

7 Ontario Regulation 691/86, section 3(a).

8 Ontario, Ministry of Health (1987, p. 5).

9 The 1987 use of the FNC set the fee for the period December 1, 1986 to November 30, 1987; the 1988 use of the FNC set the fee for December 1, 1987 until November 30, 1988.

10 Ontario Pharmacists' Association (1988a, p. 2).

11 Ontario, Ministry of Health (1988b, p. 22).

12 This discussion follows closely Gordon (1987 pp. 4-6).

13 Ontario, Ministry of Health (1988b, p. 7) concerning the failure following the 1987 Chairman's report.

14 For details see Ontario Pharmacists' Association (1988a), Ontario, Ministry of Health (1988b) and Gordon (1988).

15 This does not seem to have shaken Gordon's belief that this is the appropriate method of setting the dispensing fee. See Gordon and Maule (1989).

16 Some senior officials at the Ministry of Health took the view that the one month was a minimum, but apparently to no avail, since this was generally interpreted by the pharmacist to be maximum as well.

17 Indeed, the Participation Agreement would appear, as such to have disappeared with the Act codifying much of the contractual arrangements.

18 Woods Gordon, (1981, Volume 1, p. 6).

19 The criteria were as follows: the drug had to be designated circle one in the January, 1985 Formulary (Ontario, Ministry of Health, 1985b); have cost (including dispensing fee) ODB over $100,000 in March, 1986; and the ODB must have paid for at least 450,000 units of the drug in March, 1986. Thus the sample is important in terms of expenditure and has enough quantity to suggest the average number used will no more because of one or two outliers.

20 This was chosen since March was the most recent month available. In terms of possible bias the fall months should be avoided because many ODB recipients go South to the U.S. and buy large quantities. There seems no particular bias in selecting March. (Monthly data was selected because of the way in which the ODB data is captured, printed and made available).

21 It is perhaps for this reason that pharmacists generally opposed the dispense as written policy included in Bills 54 and 55. See, for example, Ontario Pharmacists' Association (1986, pp. 26-27).

22 Woods Gordon (1981, Volume 1, p. 3).

23 Although drug costs are set by the BAP + 10 per cent in both markets, to the extent that there is less product selection of the lower priced brands in the non-ODB than ODB market then the drug cost on interchangeable drugs will be higher in the non-ODB market.

24 This concerned the Metropolitan Toronto Pharmacists' Association and Green Shield. It resulted in the former being charged under the Combines Investigation Act to prevent or lessen unduly competition. At trial the Association was

acquitted. See Director of Investigation and Research, (1985, pp. 46-7).

25 Ontario, Ministry of Health (1988b, pp. 18-21) and Woods Gordon (1981, Volume 1, p. 4).

26 In any event, the Ministry felt that existing fee differences between the ODB and non-ODB market were not justified on a cost basis. Ontario, Ministry of Health (1988b, p. 20).

27 Fees in other jurisdictions do not seem to be substantially higher than Ontario. (Ontario, Ministry of Health, 1988b, p. 48). Furthermore, the pharmacist has the option of not participating in the ODB if he wishes.

28 Much of this discussion is based upon Gordon (1987, 1988) and Ontario, Ministry of Health (1987, 1988b).

29 Ontario Pharmacists' Association (1988a, p. 4). One commentator suggested that this may overstate the importance of independents and understate franchise, because the latter may classify themselves as independents rather than franchise.

30 Saskatchewan, Saskatchewan Health Prescription Drug Plan (1988, p. 11).

31 This issue is discussed further in the next chapter.

32 Ontario, Ministry of Health (1988b, p. 18).

33 Ontario, Ministry of Health (1988b, Appendix 3, n.p.) which is based upon data supplied by the Ontario College of Pharmacists. Data supplied by the College shows that the number of pharmacies in Ontario in july 1989 was 2091.

34 See Table 3-4 for details.

35 In Australia a similar discussion occurred over the appropriate size of pharmacy to base the fee cost estimation upon, with the government wanting a larger size, the pharmacists, a smaller size (Bureau of Industry Economics, 1985, p. 33.)

36 Forbes, Hughes and Warley (1982).

37 Advisory Council on Adjustment (1989, p. 116).

38 See, for example, the discussion in Green (1985), Stigler (1975), Ontario Economic Council (1978) and Economic Council of Canada (1979).

39 It might also be pointed out that costs might be too low if the provincial government were to use its substantial bargaining power to prevent fee increases. However, it is difficult to square this with the continuing increase in new pharmacies in Ontario. See, for details, discussion in the text below.

40 Muzondo and Pazderka (1980).

41 Commission on Inquiry on the Pharmaceutical industry (1985, p. 409).

42 The Ministry of Health conducts routine audits of pharmacists, so this extra requirement should be marginal in nature.

43 For four drugs comparable data was not available for B.C. for a variety of reasons, including the fact it was not an eligible benefit. For triazolam 0.5 mg tab. for Ontario this was not a listed benefit in 1989. For ease of computation a consistent sample was therefore used of 35.

44 A simple example illustrates the point,
total claims = total quantity / average quantity per claim.
then for example,
total claims = 300
total quantity = 9000
average quantity = 30

Now suppose we assume that total quantity remains unchanged but average quantity increases by 50 per cent to 45, then total claims decline to 200, a drop of a third.

45 The 70 per cent figure comes from Gordon (1984, p. 30). Thus, for 30 per cent no effect would be felt, but for 70 per cent there would be a fall of one third to 46.67 per cent. Then the new total with a dispense as written policy would be 76.67 per cent. The 20 per cent in the text is thus an underestimate.

46 This, of course, makes a number of strong other things equal assumptions.

47 The discussion draws upon Ontario College of Pharmacists (1988); Pharmaceutical Inquiry of Ontario (1989b); Green Shield (1988); Ontario Pharmacists' Association (1988) Third Position Paper.

48 See discussion in Chiles (1988).

Table 3-1

The Number of Claims[1] and Average Quantity Dispensed Per Claim for 40 High Volume Drugs, by Dosage Form and Strength, Ontario Drug Benefit, March 1986- March, 1989

Drug, dosage form and strength	1986		1987		1988		1989	
	Claims	Average quantity	Claims	Average quantity	Claims	Average quantity	Claims	Average quantity
	(Number)							
Digoxin, 0.25 mg. tab.	32,109	32.17	30,868	33.03	30,355	34.31	27,259	35.40
Digoxin, 0.125 mg. tab.	60,865	32.22	62,236	32.50	63,383	33.30	58,414	34.16
Propranolol, 40 mg. tab.	21,794	81.81	19,348	81.96	17,932	83.62	14,285	85.95
Nifedipine, 10 mg. cap.	13,466	120.09	15,373	114.04	16,471	115.62	13,278	113.15
Diltiazem HCl, 60 mg. tab.	6,176	115.59	10,786	113.36	17,162	114.84	19,393	113.67
Diltiazem HCl, 30 mg. tab.	8,253	117.41	13,503	114.98	19,071	117.61	20,894	116.73
Amiloride HCl and hydrochlorothiazide, 5 mg. and 50 mg. tab.	24,122	33.75	29,006	34.35	30,939	35.61	28,593	36.51
Methyldopa 250 mg. tab.	20,394	74.48	19,254	75.04	17,958	77.13	14,390	78.86
Hydrochlorothiazide and spironolactone, 25 mg. and 25 mg. tab.	15,809	43.03	14,506	42.89	13,643	43.95	11,245	44.74
Hydrochlorothiazide and triamterene, 25 mg. and 50 mg. tab.	53,141	36.63	53,920	37.05	53,613	37.95	46,871	38.65
Metoprolol tartrate, 100 mg. tab.	7,840	66.33	7,235	66.96	6,938	67.94	5,891	69.28
Metoprolol tartrate, 50 mg. tab.	17,356	59.80	17,072	60.11	17,037	61.63	15,305	62.76
Hydralazine HCl, 25 mg. tab.	7,233	85.58	7,270	85.21	6,991	86.35	5,519	86.83
Prazosin HCl., 1 mg. tab.	7,321	62.74	7,397	65.22	7,146	66.42	6,076	68.21
Isosorbide dinitrate, 30 mg. tab.	17,183	135.25	17,862	133.95	19,099	132.00	18,058	129.15

Drug dosage, form and strength	1986		1987		1988		1989	
	Claims	Average quantity	Claims	Average quantity	Claims	Average quantity	Claims	Average quantity
Isosorbide dinitrate, 10 mg. tab.	15,538	132.97	15,336	133.24	15,812	132.52	14,436	131.82
Acetylsalicylic acid, 650 mg. Ent tab.	41,538	88.24	44,165	86.18	47,278	85.31	41,713	85.73
Acetylsalicylic acid, 325 mg. Ent tab.	21,496	79.34	26,915	74.07	37,044	68.64	46,393	63.06
Naproxen, 250 mg. tab.	15,423	68.16	15,337	67.42	14,938	66.27	13,485	65.82
Ibuprofen, 400 mg. tab.	7,507	86.88	7,705	85.34	7,776	83.93	7,434	81.50
Diclofenac sodium, 50 mg. Ent. tab.	10,475	75.94	12,505	75.25	12,634	74.77	12,999	73.50
Ketoprofen, 50 mg. Ent. tab.	6,045	85.97	7,287	85.12	6,596	87.14	5,115	84.04
Phenytoin (diphenylhydaptoin) sodium, 100 mg. cap.	13,940	93.23	14,783	93.46	15,591	94.76	15,046	94.67
Diazepam, 10 mg. tab.	24,798	56.59	24,125	55.56	24,366	55.24	21,576	54.55
Lorazepam, 1 mg. tab.	22,193	53.72	26,061	53.22	30,318	52.98	31,130	51.90
Triazolam, 0.5 mg. tab.	18,980	32.95	21,374	33.36	23,247	33.51	-[2]	-[2]
Triazolam, 0.25 mg. tab.	26,836	32.59	30,877	32.59	35,520	32.96	44,124	39.08
Potassium chloride, 8 mEq LA tab.	47,302	71.48	47,910	72.58	48,600	74.03	44,197	75.37
Calcium carbonate, 1250 mg. tab.	19,281	54.66	27,319	55.28	25,962	57.11	24,427	59.52
Furosemide 40 mg. tab.	48,999	43.15	51,398	43.85	54,479	45.19	52,124	46.38
Hydrochiorothiazide, 50 mg. tab.	45,043	34.22	40,534	35.03	36,539	36.58	29,213	37.80
Sulfinpyrazone, 200 mg. tab.	8,769	95.93	7,275	95.13	6,482	94.95	4,805	94.95
Aluminum hydroxide and magnesium hydroxide, 40 mg. and 40 mg./ml O/L	15,154	692.88	15,661	670.60	16,611	660.58	15,793	655.59

Drug dosage, form and strength	1986		1987		1988		1989	
	Claims	Average quantity	Claims	Average quantity	Claims	Average quantity	Claims	Average quantity
Cimetidine, 300 mg. tab.	18,709	87.74	16,586	87.89	15,143	87.36	12,159	87.98
Lactulose, 666.7 mg./ml O/L	4,248	935.56	5,364	904.36	6,414	894.42	6,883	847.62
Metoclopramide HCl, 10 mg. tab.	6,520	84.25	5,450	83.71	4,699	84.29	3,965	84.09
Glyburide, 5 mg. tab.	19,931	65.37	22,989	66.61	28,019	70.85	29,599	73.03
Levothyroxine (sodium), 0.1 mg. tab.	19,451	34.66	22,232	35.97	24,542	38.13	25,503	40.27
Theophylline anhydrous, 300 mg. LA tab.	10,824	63.56	12,284	64.40	12,957	66.00	11,803	66.59
Theophylline anhydrous, 200 mg. LA tab.	7,943	64.95	8,844	66.61	9,627	66.55	8,651	68.03
All ODB claims	2,393,727	25.16	2,602,422	26.13	2,955,546	31.82	2,895,094	30.65

1 Each time a pharmacist asks for reimbursement a claim is made. Note that if a doctor's prescription is written as are 30 days course of treatment with five refills this would result in six claims.

2 This dosage form and strength was withdrawn from the 1989 Formulary

Source Ontario Drug Benefit "Formulary Utilization" Computer Print-Out for March 1986 to March 1989.

Table 3-2

Changes in the Average Quantity Dispensed per Ontario Drug Benefit Claim, Forty High Volume Drugs, March 1986 - March 1989

	March 1986	March 1987	March 1988	March 1989
		N=40		
Average quantity	107.77	106.19	106.31	-
standard deviation	168.80	162.82	165.50	-
		N=39		
Average quantity	109.69	108.05	108.18	107.10
Standard deviation	170.57	164.51	162.15	155.57
		N=40		
	March 87/ March 86	March 88/ March 87	March 89/ March 88	March 89/ March 86
Percentage change in average quantity	-0.07	1.17	-	-
Standard deviation	2.21	2.43	-	-
		N=39		
Percentage change in average quantity	-0.10	1.19	0.88	2.12
Standard deviation	2.23	2.46	3.95	7.42

NOTE: N=40 reflects to the full sample in Table 3-2, while N=39 excludes triazolam 0.5 mg tab. which was not in the January, 1989 Formulary.

Source: Table 3-1

Table 3-3

The Structure of Private and Public Dispensing Fees in the Ontario Retail Drug Market, 1987-1989.

		Private[2]			
				Range	
	Public[1]	Average	Median	Low	High
March 20, 1987	$5.95	$6.87	$6.85	$3.00	$10.98
May 12, 1987	5.95	7.02	7.00	3.00	10.98
September 15, 1987	5.95	7.28	7.49	3.00	10.98
December 31, 1987	6.22	7.37	7.25	3.49	9.99
May 27, 1988	6.22	7.72	7.82	4.50	10.00
January 9, 1989	6.22	8.02	7.99	4.80	10.00
July 11, 1989	6.22	8.22	8.49	4.98	11.00

1 ODB negotiated dispensing fee. It applies to all prescription drugs whether or not they are single or multiple source. The average ODB dispensing appeared to be slightly below the negotiated fee for at least some periods -- less than one percentage point.

2 The pharmacy is required to register his usual and customary fee for dispensing an interchangeable product with the College of Pharmacists.

Source Based on data supplied by the Ontario Ministry of Health and the Ontario College of Pharmacists.

Table 3-4

Distribution of Ontario Drug Benefit Claim Payment to Retail Pharmacy Stores[1]
August 1985 - January 1986

Number of stores	Dollars paid	Percentage of total	Cumulative dollars	Percentage total cumulative	Percentage number of stores
100	$ 30,971,431.70	16.7	$ 30,971,831.70	16.7	5.1
100	21,147,981.63	11.4	52,119,373.33	28.1	10.2
100	17,759,431.42	9.6	69,878,804.75	37.7	15.3
100	15,465,935.43	8.3	85,344,740.18	46.0	20.4
100	13,795,157.04	7.4	99,139,897.22	53.5	25.5
100	12,193,327.59	6.6	111,333,224.81	60.1	30.6
100	10,819,482.40	5.8	122,152,707.21	65.9	35.7
100	9,736,763.17	5.3	131,889,470.38	71.2	40.8
100	8,746,648.40	4.7	140,636,118.78	75.9	45.9
100	7,857,140.88	4.2	148,493,259.66	80.1	51.0
100	7,047,185.96	3.8	155,540,445.62	83.9	56.1
100	6,339,775.65	3.4	161,880,201.27	87.3	61.2
100	5,584,728.29	3.0	167,464,929.56	90.4	66.3
100	4,896,411.68	2.6	172,361,341.24	93.0	71.4
100	4.158,148.64	2.2	176,519,489.88	95.3	76.5
100	3,374,540.32	1.8	179,894,030.20	97.6	81.6
100	2,618,815.41	1.4	182,512,845.61	98.5	86.7
100	1,707,761.18	0.9	184,220,606.79	99.4	91.8
100	914,291.26	0.5	184,134,898.05	99.5	96.9
73	181,968.94	0.1	185,316,866.99	100.0	100.0

1 Pharmacy stores ranked by ODB claim payment volumes.

Source Crosthwait Consulting Services Ltd. (1986, Exhibit 7, n.p.)

Table 3-5

A Comparison of Average Quantity Dispensed Per Claim, 35 High Volume Drugs,[1] Ontario Drug Benefit[2] and British Columbia Pharmacare,[3] Selected Periods, 1986-1989

	Ratio of average quantity dispensed B.C. Pharmacare to ODB[5]
	Pre seniors co-payment on dispensing fee in B.C.
1986[4]	
Mean	1.4607
Standard deviation	0.4435
1987[4]	
Mean	1.4734
Standard deviation	0.4188
	Post seniors co-payment on dispensing fee in B.C.
1988[4]	
Mean	1.6344
Standard deviation	0.4060
1989[4]	
Mean	1.6302
Standard deviation	0.3735

1 The sample consists of those 40 drugs in Table 3-1 less acetylsalicylic acid 325 mg Ent. tab., calcium carbonate 1250 mg tab., aluminum hydroxide and magnesium hydroxide 40 mg and 40 ml/ O/L, and triazolam 0.5 mg tab.

2 Refers to all claims for these sample of drugs paid for by ODB.

3 Refers only to these claims paid by Pharmacare for senior citizens.

4 For ODB March of the given year; for B.C. Pharmacare the first quarter.

5 For each drug the average quantity dispensed per claim in B.C. and Ontario is estimated separately. Then, for each drug the ratio of average B.C. quantity to average Ontario quantity is estimated. The mean of this ratio is reported in the table.

Source Ontario Drug Benefit, "Formulary Utilization", computer print-out for March, 1986 to March, 1989 and data supplied by B.C. Pharmacare.

Table 3-6

Number of Claims Per Beneficiary, Ontario Drug Benefit Program, 1988/89

Number of claims	Number of beneficiaries making this number of claims
1	146,206
2	107,263
3	77,915
4	64,073
5-10	246,982
11-20	260,766
21-25	98,608
26-30	80,739
31-35	68,777
36-40	58,997
41-45	48,569
46-50	41,402
51-60	62,974
61-75	59,868
76-100	47,748
Over 100	30,942
Average	23.54

Source Based on data supplied by the Ontario Ministry of Health.

Table 3-7

Impact on ODB Dispensing Fee Expenditures Under Various Assumptions, 1988/89

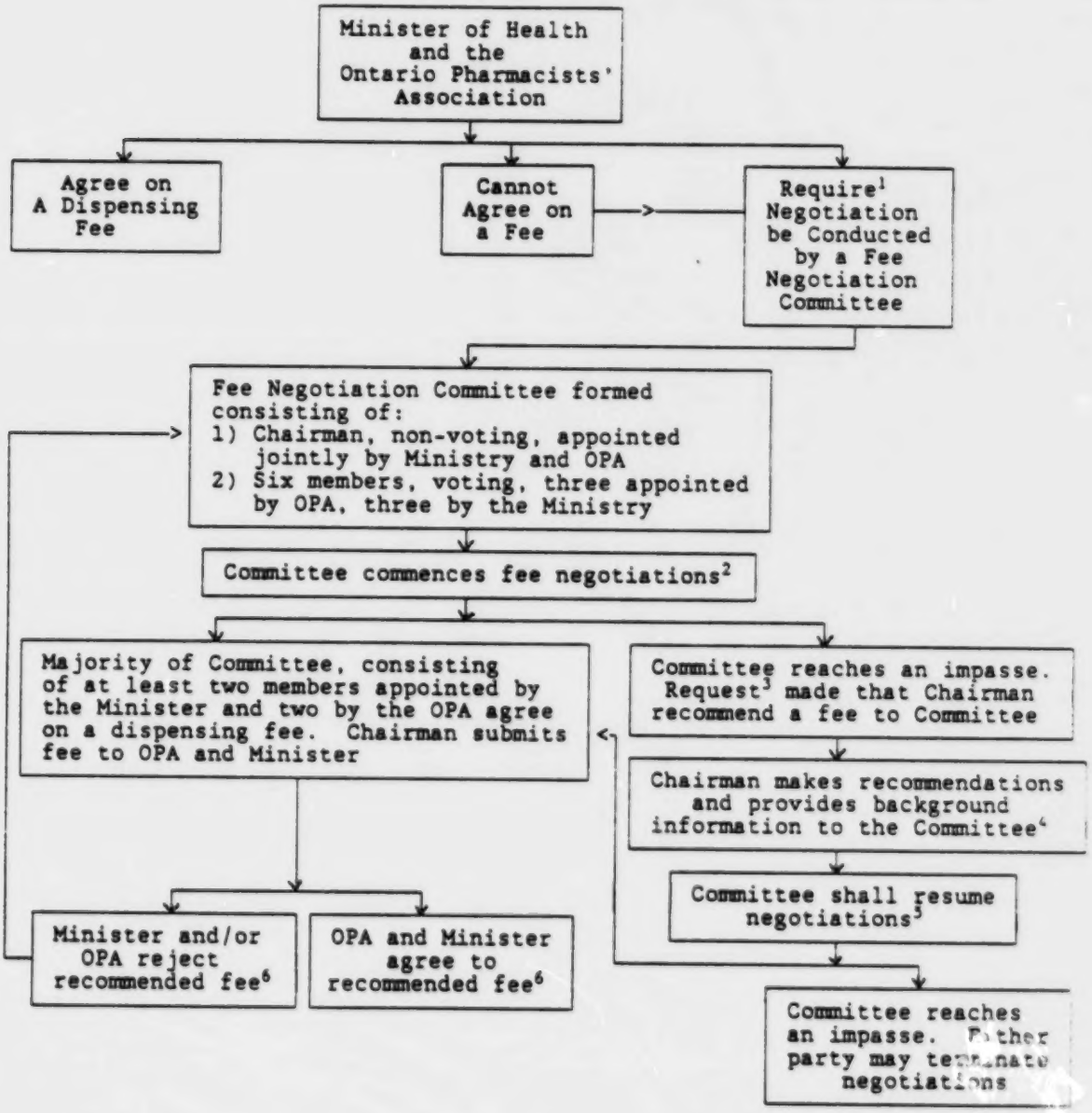
	Fee level assumed	
	Actual ODB fee	Private sector representative fee
	$6.22	$8.00[1]
1) Total ODB fee expenditure	100	128.6
	No copayment, status quo	
2) Dispense as written policy successfully implemented[2]	80	102.9
	Copayment on fee, competitive marketplace	
3) Dispense as written policy successfully implemented[3]	70	90.0
4) Patient copayment of 75 per cent plus the successfully dispense as written policy[4]	17.5	22.5
5) Patient copayment of 75 per cent, above $125 no copayment, plus successful dispense as written policy[5]	27.03	44.61
6) Patient copayment of 75 per cent, above $125 no copayment, successful dispense as written policy, no-copayment for those receiving gains, family benefits and general welfare	46.49	60.70

1 Based on Table 3-3.
2 Uses data in Table 3-5 for 1986 and 1987 and discussion in text which estimates a 20 per cent drop in claims.
3 Uses same approach as in note 2 except uses data for 1988 and 1989 from Table 3-5.
4 In all instances the patient pays a copayment of 75 per cent.
5 The deductible for $6.22 translates into 20 claims for which a copayment must be made; the $8.00 fee 21. The data in Table 3-6 was then used to estimate the number of claims paid by the beneficiary. In each size category it was assumed conservatively that all claimants were at the bottom.
6 Unpublished Ministry of Health data suggests that for 1988/89 general welfare and family benefits recipients cost on average 48.18 per cent of the mean cost per beneficiary; those funded by the Ministry of Health 33.52 per cent above the average. It was assumed the same relationship held for claims. The number of family benefit and general welfare recipients is given in Table 1-2, the Ontario Revenue/Taxation gave the average monthly number of GAINS recipients at 161,000. Since people usually stay on GAINS all year, the 161,000 number was used.

Source Various sources. See notes.

Figure 3-1

Procedure under the Ontario Drug Benefit Act, 1986 for the Determining of the Pharmacist's Dispensing Fee.


Minister of Health and the Ontario Pharmacists' Association
Agree on A Dispensing Fee
Cannot Agree on a Fee
Require[1] Negotiation be Conducted by a Fee Negotiation Committee
Fee Negotiation Committee formed consisting of:
1) Chairman, non-voting, appointed jointly by Ministry and OPA
2) Six members, voting, three appointed by OPA, three by the Ministry
Committee commences fee negotiations[2]
Majority of Committee, consisting of at least two members appointed by the Minister and two by the OPA agree on a dispensing fee. Chairman submits fee to OPA and Minister
Committee reaches an impasse. Request[3] made that Chairman recommend a fee to Committee
Chairman makes recommendations and provides background information to the Committee[4]
Committee shall resume negotiations[5]
Committee reaches an impasse. Either party may terminate negotiations
Minister and/or OPA reject recommended fee[6]
OPA and Minister agree to recommended fee[6]

1 The Minister or the OPA may, by notice in writing to the other, require the formation of the committee. After the notice has been received the committee shall be formed within seven days.
2 As soon as reasonably possible on a date set by the Chairman.
3 Request may be made by either Minister or the OPA, if they believe an impasse has be reached.
4 The Chairman shall make the recommendation within 30 days of being requested to do so.
5 Within seven days of receiving the Chairman's recommendations.
6 Reply to be made within 14 days after receiving recommendation.

Source Section (7), Ontario Drug Benefit Act, 1986.

Figure 3-2

Alternative Models and Methods for Compensating Pharmacists

Compensation model	Method of setting the level of remuneration			
	Competition	Franchise via auction	Regulation	Negotiation
1. DISPENSING FEE: the pharmacist receives a fixed fee for each prescription dispensed to cover his professional services.	1. Each pharmacist sets his/her own individual level of compensation.	1. Pharmacists are asked to bid to supply the needs of patients in a given geographic area.	1. A regulatory body takes submissions and recommends an appropriate level of remuneration.	1. Pharmacists and health officials meet to determine an acceptable level of compensation.
2. CAPITATION: the pharmacist receives a fixed dollar amount for each recipient for all their prescriptions for a given time period.	2. Competitive marketplace created by making consumers have a co-payment and pharmacists disclosure professional services and compensation.	2. Government, perhaps with pharmacy, sets the parameters with respect to size of geographic area, length of contract and so on.	2. The regulatory body could consist of industry experts, disinterested citizens and/or producers.	2. Various sorts of data could be brought to bear on such negotiations including cost data, comparable professional p[illegible]s, overall governme[illegible] policy and so on.
	3. Policing of market by competition law officials. Disqualify pharmacists caught braking law.	3. Such a geographic distribution of pharmacies come close to the 'rational' distribution of pharmacies in some European countries.	3. The criteria usually employed by regulatory boards to determine levels of remuneration are cost based formulas.	3. Various negotiation mechanisms could be introduced including elaborate system in Ontario in which there is an arbitrator.

SOURCE: Various

4 DRUG COST

INTRODUCTION

In Chapter 3, the issue of the appropriate method of determining the dispensing fee was addressed. Attention was confined to the role of the patient/consumer, the pharmacist and the provincial Ministry of Health. One particularly attractive method involved a much greater participation by the patient/consumer and a changed, but continuing and important, role for the Ministry. In essence, the alternative was for the creation of a market-determined fee, based upon the interface between the pharmacist and the patient/consumer, rather than, as at present, a negotiated fee based on the interface between pharmacists and the Ministry.

In this chapter, attention is confined to the mechanisms and procedures that determine the level of drug costs in the province of Ontario. There are several issues that need to be resolved and evaluated. These vary from the role of the Formulary as a cost control mechanism and guide to quality drug products, to the concern that the 1986 legislative changes may have had an unintended adverse affect on the drug distribution system — particularly as it relates to role of drug wholesalers. These issues are not easy to resolve and evaluate, often requiring a combination of skills from the physician, pharmacist to the economist. Nevertheless, available data and other information

permit substantial progress to be made toward evaluating much of Ontario's drug cost control mechanisms.

The chapter is organized as follows. In the next section, the present drug cost control mechanisms and procedures in Ontario, under the ODB, are described. An evaluation of this system together with a discussion of some options and alternatives constitute the next two sections. The chapter ends with a brief conclusion.

THE PRESENT SYSTEM

The present system of controlling drug costs in Ontario utilizes a number of different mechanisms and devices. In the description of that system, the machinery and procedure required in order to get a drug product listed as an eligible benefit under the ODB and the price at which the ODB will reimburse the pharmacist is first detailed. Attention then turns to four specific issues in more detail: the Formulary; the Best Available Price or BAP; the mark-up on BAP; and, finally, the pricing and product selection rules. A brief overview completes the section.

Machinery

Figure 4-1 details the machinery and procedure involved in order for a manufacturer to have a drug product listed as an eligible

benefit in the Ontario Formulary. The procedure involves four stages: submission; testing and review; evaluation and implementation. Various regulations, administrative guidelines and Terms of Reference govern this procedure. Manufacturers, the Drug Quality and Therapeutics Committee, the Ministry of Health and the Cabinet are all involved in various parts of the procedure. Apart from the DQTC, these pieces of machinery need no introduction.

The centrepiece of the machinery involved in the Drug Submission Process is the Drug Quality and Therapeutics Committee (DQTC). As noted in Chapter 2, the DQTC has always been an important instrument in Ontario's drug programs. It has a wide ranging set of Terms of Reference, reproduced in Figure 4-2. These terms include not only recommending to the Ministry of Health, "which drug products have met the prescribed conditions to be eligible to be designated as interchangeable products or listed drug products", but also to establish criteria to evaluate drug quality and therapeutic value.

The DQTC has a chairman and vice-chairman, both appointed by the government of the day. It also has a number of members, all of which are also appointed by the government of the day. Currently these number seventeen (Ontario, Ministry of Health, 1989c, p. iv). The DQTC consists largely of expert medical professionals, such as physicians, pharmacists and other relevant

disciplines, both practising and in universities. Administrative guidelines detail the duties, organization and procedures to be followed. They also include conflict of interest provisions, which may limit involvement of a member in the case of a particular drug submission. Furthermore, members are asked to avoid public presentations with respect to the DQTC to drug manufacturers and pharmaceutical associations "so as not to create any appearance of unfairness on the part of Committee members."[1]

Timing and Volume

The Drug Submission Procedure is designed, as indicated in Figure 4-1, to take six months. This is so that it can be linked to the January and July editions of the Formulary. Letters are sent to manufacturers prior to the commencement of considering submissions for each Formulary. These specify the deadlines required for submission, deadlines which are established by regulation.

Table 4-1 gives an indication of the volume of drug products considered for and included in the January and July 1989 Formularies. The numbers probably impart a upward bias to the volume of work, since several different strengths of a given drug, although all part of the same drug submission, are counted as separate drug products. With this caveat in mind two conclusions may be drawn from the table: a large number of drug products are

considered by the DQTC; and a non-trivial percentage of drug products are rejected -- 14.1 per cent for January and 27.8 per cent for July -- by the process outlined in Figure 4-1.

Procedure

In making submissions for inclusion as an eligible benefit in the Formulary, drug manufactures are provided — pursuant to regulations of the ODB Act, 1986 and the PDCR Act, 1986[2] — with a list of the necessary documentation. This includes the Notice of Compliance and product monograph, the DIN, ingredients, quality control procedures employed and so on. In the case of a drug seeking to become interchangeable[3] with the original product, the firms must submit comparative bioavailability studies or comparative clinical studies or both in humans or other in vivo studies that will demonstrate interchangeability. In the case of a single source product, where relevant, evidence on the need for an additional strength or modified release dosage form is required. In order to assist the manufacturer in providing the correct documentation the Ministry of Health has issued, "Interpretative Guidelines for Manufacturers Making Drug Submissions."

The next step in the Drug Submission Procedure is that of testing and review, which involves both the technical parts of the Ministry of Health as well as the DQTC. As indicated in

Figure 4-1, the Ministry examines the drug samples provided by the manufacturer as well as examining the manufacturing and quality control procedures. A member of the DQTC (or in those instances where the expertise is not available within the Committee, an outside expert) evaluates the bioavailability and clinical data provided. On the basis of all of this evidence, a recommendation to a subcommittee of the DQTC is made as to whether or not a particular drug product should be listed in the Formulary. This subcommittee's recommendation then goes to the full DQTC, which, in turn, makes a final recommendation to the Ministry of Health.

The DQTC recommendation is accepted, in the vast majority of cases, by the Minister. An appeal procedure is available. The manufacturer is notified of the DQTC's recommendation and the Ministry's concurrence. In the case of a rejection reasons are provided in notifying the manufacturer. These may state that there is inadequate documentation with respect to (say) therapeutic effectiveness, the product is not superior to existing products yet is twice as high in price, and so on. The manufacturer can then respond by, for example, providing additional evidence or pointing out that its submission had been incorrectly interpreted. The response is then forward via the Ministry, for the DQTC to reconsider its decision.

The final stage of the Drug Submission Process is implementation. Once the Ministry has accepted the DQTC

recommendation and the manufacturers' appeal has been dealt with, then the Ministry has to decide on the price of the drug for reimbursement purposes — the BAP. All the relevant documentary support for the recommendations of both the DQTC and senior officials of the Ministry are then sent to the Minister and eventually to the Cabinet. However, only in cases which are likely to attract public attention or involve particularly important public policy issues do these two groups became actively involved. The Cabinet's involvement reflects the fact that the Formulary is published pursuant to the power vested in the Lieutenant Governor in Council under the ODB Act, 1986 and the PDCR Act, 1986. The final stage in the Drug Submission Process is the publication of the semi-annual Formulary, which is distributed free to medical practitioners, pharmacies and hospitals in Ontario.

It should be noted, however, that the Drug Submission Process does not always proceed in the fashion described above. In some instances if a firm fails to get its product listed as an eligible benefit in the Formulary it may challenge that decision in Court, appeal to the Minister of Health or even lobby the Cabinet. Apotex (1988) in its brief to the Pharmaceutical Inquiry of Ontario cites several instances in which it became involved in some of these avenues of appeal. In one instance, in 1980 concerning propranolol HCI, Apotex appealed to the Minister of Health, who set in motion a review procedure that led to a

reversal of the DQTC's decision not to list Apo-Propranolol as interchangeable. In the case of ibuprofen, Apotex had its brand delisted from the Formulary in early 1986 by the Minister of Health, on the advice of the DQTC. However, Apotex was unsuccessful in contesting this decision in Court.

Sometimes other actors become involved in the process than those described above. In particular, where a generic firm, such as Apotex or Novopharm, is making a submission for its brand to become interchangeable with the original product, the manufacturer of the latter product may seek to intervene to prevent, slow or alter the outcome of the Drug Submission Process. For example, by successfully getting the product listed as "Not Interchangeable" rather than "Interchangeable". Such intervention can take the form of the legal actions alleging, for example, the conditions for approval for interchangeability have not been met or quietly lobbying officials and Cabinet Ministers. In one recent case -- that concerning Apotex's submission to have Apo-Salvent be made interchangeable with Ventolin for the 1nh-200 dose Pk -- this is precisely what happened.[4]

Glaxo, the manufacturer of Ventolin, indicated that a favourable decision on interchangeability for Apo-Salvent could jeopardise its future research and development in Ontario and demanded that Apo-Salvent be sent back to the DQTC for reconsideration. Although the Cabinet agreed to this latter request, the DQTC did

not change its favourable recommendation as to interchangeability and the Cabinet affirmed the recommendation in the July 1989 Ontario Formulary.

At face value it would appear that the intervention by Glaxo was unsuccessful in that: Apo-Salvent was listed as an eligible benefit and interchangeable and not delayed to the January 1990 Formulary or listed as an eligible benefit but as non-interchangeable. While this is undoubtedly correct, Glaxo's intervention was not without effect on Drug Submission Process and those participating. The fact that the Cabinet sent back to the DQTC for a second time questions and undermines the judgement and authority of that Committee. The media coverage meant that some doubt was probably sown in the minds of at least some physicians and may have led to a greater number no substitution prescriptions for Glaxo's brand when the generic brand appeared. It may even have led concerned ODB recipients to have requested the physician to prescribe a no substitution prescription for Ventolin.

Finally, the Formulary became effective on July 17 rather than July 1. This meant that the January 1989 Formulary was in effect for the first 17 days of July 1989 with Glaxo's brand listed as a single source. This was probably with several $100,000's worth of sales to Glaxo.[5] Such results could well persuade other manufacturers of an original product to lobby in a similar manner when a generic firm applies to have its product listed as

interchangeable; if there was enough of a concerted effort by a number of original product owners this might mean a Formulary would be issued without the interchangeable brands listed and thus confer a substantial benefit to the patent owner for six months and perhaps longer. Such uncertainty would, of course, considerably add to the costs of the generic manufacturer in terms of increased inventories, idle machinery, delayed advertising campaign and so on. The original product manufacturer might also experience increased costs in view of the uncertainty with respect to such decisions as to whether or not to launch a fighting brand, the nature of future advertising and the appropriate level of output.

Eligibility Criteria

There are no specific guidelines in the ODB Act, 1986 as to the criteria to be employed in listing drugs in the Formulary nor the conditions, in the PDCR Act, 1986, concerning the listing of a product as interchangeable, beyond that it must contain "a drug or drugs in the same amounts of the same active ingredients in the same dosage form as the other product" (section 14(1)(a)(i)). In both cases detailed requirements are left to the discretion of the Lieutenant Governor in Council. (See sections 18(b) and (c) of the ODB Act, 1986; and section 14(1)(a) and (b) of the PDCR Act, 1986). These requirements are set out in the regulations passed pursuant to these two Acts. They detail the documentation that is

required when a manufacturer makes a drug submission in order to become an eligible benefit. There is no legislation or regulations specifying the criteria to be used in accepting or rejecting a manufacturer's submission, beyond the fact it must be completed in accordance with the regulations relating to the drug submission procedure. In other words, there are, in the legislation and associated regulations, a necessary (but not sufficient) set of conditions for becoming an eligible benefit. Thus, even if these necessary conditions are satisfied, the Lieutenant Governor in Council may reject the submission when it "considers it advisable in the public interest to do so." (ODB Act 1986, section 18 (1) (c); PDCR Act, 1986, section 14(1)(b)). In the Ventolin example discussed above the Lieutenant Governor in Council, despite the DQTC's unanimous recommendation to list Apo-Salvent, could simply have said no, with no reasons -- but this may, of course, have resulted in several, if not all, of the members of the DQTC resigning.

Although there are no sufficient set of conditions for a drug to be listed as an eligible benefit, in the Formulary, under the heading "Selection of Drugs", five criteria are set out that are considered in reviewing drugs. Since the Formulary is published pursuant to a regulation of the Lieutenant Governor in Council these criteria presumably have the agreement of the government of the day. The criteria are as follows:

1. The proven medical value of the drug for the diagnosis, prevention or treatment of mental or physical disorders.

2. The balance between therapeutic usefulness and potential harmful effects, and the availability of suitable alternative agents.

3. Patient well-being or therapeutic outcome is not compromised by interchanging pharmaceutical products.

4. A higher-priced analog is included if it offers a therapeutic advantage.

5. Combination products are included if, in addition to meeting all other criteria:

   i) each component of the combination makes a contribution to the claimed effect, and

   ii) there is a pharmacological and pharmaceutical rationale for the mixture; the effect of each component should extend throughout the recommended dosage interval of the combination, and

   iii) the dosage of each component (amount, frequency, duration) must be such that the combination is safe and effective for a significant patient population requiring such concurrent therapy as defined in the labelling for the drug, and

   iv) where the cost is comparable to that of similar medication prescribed as one or more single entities. (Ontario, Ministry of Health, 1989a, p. IX).

Thus, the decision-making process from the DQTC to the Minister to the Cabinet, as to the listing of a drug requires the careful judgement and balancing of different criteria. At a minimum they require additional criteria to be applied to the safety and efficacy rules of the federal government in deciding that a drug can be legally sold in Canada. A theme running through both the objective and criteria are cost considerations. It would appear that such factors have become more important in recent times.

Formulary

The Formulary is a very important part of the Ontario government's efforts at providing quality drugs at reasonable prices to its citizens. This is reflected in the general statement, under the heading "Drug Product Selection and Quality Assurance", which reads as follow:

> The general objective of the Formulary/Comparative Drug Index (CDI) is to assist in the provision of prescribed drug products of quality at a reasonable cost. The province's drug product selection and quality assurance legislation is aimed at developing economies throughout the pharmaceutical industry and health professions by encouraging fair competition and more efficient methods of distribution and utilization of quality pharmaceutical preparations available to the people of Ontario, through community pharmacies or while in hospitals.
>
> Under the new legislation [ODB Act, 1986 and PDCR Act, 1986], the Formulary and CDI are intended to protect the consumer, to permit the government to effectively manage the ODB Plan, and to ensure that competitive and realistic drug prices prevail in Ontario.
>
> The Formulary/CDI, together, serve as:
>
> (i) a guide to practitioners identifying quality products for prescribing.
>
> (ii) a guide to pharmacists in stocking comparable products for dispensing.
>
> (iii) a guide to professional committees in the selection of pharmaceutical preparations recommended for use in hospitals.[6]
>
> (iv) confirmation of the designation of certain drug products as interchangeable under Ontario law.
>
> (v) a comparative pricing guide for interchangeable drug products. (Ontario, Ministry of Health, 1989a, p. VII).

These are a multiple set of objectives which, however, do not seem mutually inconsistent or at variance with the system described so far.

At the present time, there are approximately 2,500 separate items which are eligible benefits under the Ontario Drug Benefit programme. These are listed in the semi-annual formulary published by the province in January and July. A separate item is defined as one having a unique Drug Identification Number, or DIN, given to it by the federal government agency responsible for granting permission for drugs to be sold in Canada — the Health Protection Branch of the Department of National Health and Welfare. A DIN is given for different dosage forms and strengths of a drug and, for a given dosage form and strength, a different DIN is used for each brand for each manufacturer. Thus, the total number of separate drugs entities — diazepam as opposed to the various brands, strengths and dosage forms of diazepam — is much lower than 2,500, approximately 700.

The Formulary lists, using a pharmacologic - therapeutic classification, for each dosage form and strength of a particular drug, the following information:

- manufacturer, a three letter code;
- Drug Identification Number (or DIN) , a six digit code,

- the brand name; and
- at least one Best Available Price (or BAP)

In some instances there will be only one brand of a drug (single source), while in other instances there may be several brands of the same drug, which are grouped together and ranked by DIN number. In some instances they are interchangeable (in which case only the lowest BAP of the various brands listed will be printed), in others not (in which case a separate BAP is listed for each brand). An example of each is presented in Table 4-2.

The Formulary also lists, in the second part, taking up about a third of the Formulary, the BAP of all brands, arranged alphabetically by brand name. It might be noted, parenthetically, that as a service to its members, the Ontario Pharmacists' Association distributes, "The Pharmacy Assistant," which lists for each drug dosage, form and strength, the BAP of all brands in one place, akin to the situation prior to 1986 described in Chapter 2.

The growth in the volume of drug products listed in the Formulary together with an indication of the relative importance of single as opposed to multiple source drug products is presented in Table 4-3. The number of drug products increased between July-Dec. 1979 and July-Dec. 1988 from 1,904 to 2,488, or 31 per cent. The growth of single source drugs, whether measured in terms number of drug products, number of claims or drug cost, has been

much greater than multiple source drugs. The decrease in importance of multiple source drugs is particularly noticeable using drug cost, a reflection of the much greater rate of price increase for single as opposed to multiple source drugs.

Best Available Price

The definition of the BAP is set out in section 18 (4) of the ODB Act, 1986, as follows, for a particular dosage form and strength of a particular brand of a drug:

> the lowest amount, calculated per gram, millilitre, tablet, capsule or other appropriate unit, for which a listed drug product of that drug in that dosage form and strength can be purchased in Canada for wholesale or retail sale in Ontario and in calculating that amount, the Lieutenant Governor in Council shall deduct the value of any price reduction granted by the manufacturer or wholesaler or their representatives in the form of rebates, discounts, refunds, free goods or any other benefits of a like nature.

Essentially the same definition appears in section 7(1) of the PDCR Act, 1986.

The BAP is thus not necessarily a list or catalogue price but is instead designed to get as close as possible to the actual transaction cost net of special deals, discounts and so on. Because of the problems of the late 1970s and early 1980s, detailed in Chapter 2, no reference is made to a specific package size in the definition of BAP. Furthermore, the BAP is the lowest

price to the wholesaler or retailer, the latter referring to situations where the retailer purchases direct from the manufacturer or via an agent. The legislation specifically excludes account being taken of a "purchase of the drug for use solely in the treatment of hospital patients and out-patients" (ODB Act, 1986, section 18(3)).

The BAP is determined from several sources of information including previous Formulary prices, and information submitted by the manufacturer pursuant to the legislation.[7] However, it is this latter source which is by far the most important. Letters and forms requesting BAP for various package sizes are sent to manufacturer prior (March for July: September for January) to each Formulary being published. Deadlines are set. Failure to meet them results in no price increase being allowed.

The letters are issued pursuant to regulations passed pursuant to the ODB Act 1986 and PDRC Act. Furthermore the legislation specifically empowers inspectors appointed by the Minister of Health to seize records and other materials from physicians, pharmacists, wholesalers and manufacturers to determine whether they "have complied with this Act and regulations" (ODB Act 1986, section 14 (2) and (3)). If the person "knowingly furnishes false or incomplete information required to be submitted" then the individual upon conviction is subject to a fine (ODB Act, 1986, section 15), while the manufacturer can have his drug product

delisted or not designated as an eligible benefit (section 16(2)). With respect to manufacturers between 1986 and July 1989 it would appear that few manufacturers had been visited by inspectors pursuant to this Act. However, in the fall of 1989 inspectors conducted audits of selected wholesalers and manufacturers, to determine whether the legislation was being complied with by these firms.

When prices experience a sudden jump which bear no apparent relationship to inflation or a new product appears which has a "high" entry price, then the Ministry of Health may negotiate a lower price. For example, if manufacturers decide to switch from a wholesale only policy to a direct sales policy via an agreement with a distribution agent then they will want the BAP raised to include the distribution charge. However, after 3 or 4 manufacturers did this in 1986/87 the Ministry refused to approve any more such agreements.

The legislation would appear to give the Minister of Health some discretion in setting the BAP, in addition, that is, to any moral suasion the Ministry may exercise. Indeed, in the period since January 1, 1988 the Ministry has generally used increases to the CPI to determine whether or not a price increase is "excessive". No regulations have been passed as such. This action reflected, in part, the switch to different distribution systems and also large price increases requested by a number of manufacturers

(Ontario, Ministry of Health, 1988b, pp. 6-7). As we shall see below price increases have been quite uniform for BAP prices.

In setting the BAP the official responsible has data, supplied by the firm of its BAP for varying package sizes as well as sales. Furthermore, it has data of its own with respect to ODB purchases of the drug in the previous period. Taking these two sources a BAP is based on the package size that means the vast majority of pharmacists can buy in that package size. Thus some pharmacists -- particularly the larger ones -- will be able to purchase on larger package sizes and realise lower prices. However, the discounts across package sizes do not appear to be that great -- in order of 3-5 per cent in excess of the package size selected for the BAP. Where competition occurs is with respect to discounts for prompt payment and delaying payment for up to 120 days.[8]

Mark-up

The dollar amount that appears on the prescription, given to an ODB (and non-ODB) patient/consumer, as the drug cost is the BAP plus a fixed percentage mark-up. Under the ODB Act, 1986 this percentage shall be "not less than 10 per cent nor greater than 20 per cent " (section 18(2)). A similar provision appears in the PDCR Act, 1986 at section 7(3)(b). At the present time the Lieutenant Governor in Council has set the mark-up at 10 per cent.

No guidance is specified in the legislation as to how the percentage should be determined or, for that matter, what is its purpose. However, as discussed at some length in Chapter 2, it would appear to be for wholesaling and to ensure that small pharmacies should not be disadvantaged if they could not buy at the BAP.

Price and Product Selection Rules

The ODB has a set of pricing and product selection rules that, together with the BAP plus 10 per cent, determine the drug cost portion of a prescription and the brand dispensed. Three cases can be distinguished corresponding to those in Table 4-2 and discussed above under "Formulary". These are as follows:

(i) Single source. In these cases the pharmacist must dispense the brand specified at the BAP plus 10 per cent. Since there is only one brand the pharmacist has no choice but to dispense the brand in the Formulary. In the example in Table 4-2 a mebendazole tablet would cost $2.4383. The pharmacist is not permitted to choose another drug to mebendazole or another brand of mebendazole to Vermox (assuming one existed, but was not listed in the Formulary).

(ii) Non-interchangeable. In such instances there is more than one brand of a drug available and listed in the Formulary, but they are designated as non-interchangeable. In such cases the pharmacist must dispense the brand specified by the physician at that brand's BAP plus 10 per cent. In the example in Table 4-2, if the physician prescribes Grisovin then it must be dispensed at $0.1383 per tab despite the fact a lower priced brand of the drug is available. It is not clear what rule should be followed in those instances where a prescription is for the drug name rather than the brand name. Presumably the pharmacist exercises some

discretion in selecting the brand or contacts the physician for clarification.

(iii) Interchangeable. In such situations, whether the brand is specified or only the drug name on the prescription, the pharmacist is reimbursed no more than the BAP of the lowest priced interchangeable product plus 10 per cent, irrespective of which brand is dispensed. In the example in Table 4-2, no matter which brand of diazepam 5 mg tablets is dispensed - Valium, Vivol, ... Diazepam — the pharmacist will only be reimbursed $0.0050 plus 10 per cent. The only exception is where the physician specifies a particular brand, writes, in his own handwriting, "no substitution", on the prescription and completes a form -- a PC34 -- will that brand be dispensed at its own BAP. However, the pharmacist only receives the BAP and not the fixed 10 per cent mark-up in such instances.

The pricing and product selection rules thus involve -- in contrast to the Formulary, the BAP, and the mark-up -- the direct participation of the physician and the pharmacist.

Overview

The patient/consumer sees two items on the prescription receipt that he/she receives: the dispensing fee and drug cost. The discussion herein demonstrates the mechanisms and procedures involved in determining the drug cost component of a prescription go well beyond the actual dollar figure on the receipt. These can be divided into two groups of issues. The first set revolves around the criteria to be used to determine whether a particular drug product should be an eligible ODB benefit; the second set, the method by which a product should be priced as well as the price and product selection rules. While the second set of issues

clearly relate to the issue of cost control so do the first. Correctly administered they see that value for money is obtained when a drug product is included in the Formulary. Thus, the two sets of criteria are complementary and mutually reinforcing.

AN EVALUATION

The procedure, machinery and criteria for selecting a drug as an eligible benefit, setting a price and the rules for price and product selection, are evaluated in six separate parts:

- procedure and administration;
- special authorizations for drugs not approved as listed benefits in the Formulary;
- interchangeability;
- the BAP;
- the price and product selection rules; and
- the mark-up and the distribution system.

This evaluation corresponds, roughly, to the discussion in the previous section. The first four headings refer, essentially, to the Formulary as a cost control device and as a guide to drug therapy. The fifth part of the evaluation discusses the effectiveness of the drug pricing and product selection rules in controlling drug costs. The last part of the evaluation deals with what is, currently at least, one of the most contentious

issues with respect to government intervention in the marketplace — the concern that the BAP plus 10 per cent is discriminating unfairly and inadvertently against drug wholesalers.

Evaluating each of the six aspects of drug cost in Ontario is not an easy task. In several instances they (should) involve complex decisions about the therapeutic effectiveness of a particular drug, trade-offs between therapeutic merits of one brand over another compared to cost differences, whether two brands of a particular drug are interchangeable, whether the drug submission process is fair and equitable, what the actual price paid for the drug is in the marketplace and so on. Nevertheless there are a number of indicators and measures that permit inferences to be drawn on at least some of these issues.

There are a number of possible ways in which the effectiveness of the present system could be assessed. One approach would be to examine the machinery and procedure necessary for a drug product to become listed in the Formulary; for a special authorization to be approved; for the setting of the BAP; and so on. The theory being that if this process and the associated criteria are sound, then the "right" decisions will be made and the system will perform its assigned tasks well. A second approach, is to look at outcomes and draw conclusions and inferences about effectiveness. These two approaches are not mutually exclusive; inadequate

procedure may explain lack of success of outcomes, while unsuccessful outcomes may point to problems in an administrative procedure that seems perfectly adequate to yield the "right" decisions. In the evaluation of the present system both approaches are used, but with more emphasis -- at least in terms of space -- devoted to looking at outcomes.

Procedure and administration

Proper administration, appropriate machinery and procedures in listing a new drug as an eligible benefit in the Formulary require several conditions be met. The drug submission process, presented in Figure 4-1, should be procedurally fair. That is to say, the participants in the process -- mainly manufacturers (but also the Ministry of Health) -- should regard the procedure and machinery, particularly the DQTC, as impartial, fair, with reasoned, sensible decisions reached in accordance with publicly available criteria on the basis of the evidence submitted by the manufacturers. The process should also be timely. If it is inordinately long then not only are benefits of new drugs and cheaper generic brands denied the public, but manufacturers experience forgone sales because of the delay. Finally, the procedures and administration should have the confidence of the health practitioner, who use the Formulary in everyday medical practice.

Assessing whether the conditions for proper procedure and administration have been met is difficult to ascertain. Benchmarks are needed. These should to take into account trade-offs between (for example) timeliness and practitioner's confidence as well as procedural fairness. The drug may be listed relatively quickly but without proper evaluation and time for manufacturers' appeal. On the other hand, a lengthy process of approval, with formal notice and comment period during which a wide variety of bodies, firms and individuals could participate, may considerably slow the rate of new listings in the Formulary.

The procedure described in the preceding section for listing approvals seems a sensible compromise between speed of listing and procedural fairness. Relatively informality seems much more appropriate -- if it can work -- to formality with comment and notice and its attendant costs and delays. One indicator of whether the delay is inordinate is a comparison of the time it takes Ontario to list drugs compared with other provinces. On the available evidence it differs little at least for generic brands (Gorecki, 1986a, Table 1, pp. 378-9).

The use of independent committee of medical experts, the DQTC, whose recommendations are followed by government, should assure practitioners of the soundness of decisions reached concerning Formulary listings. However, the legislation gives the Cabinet absolute discretion in deciding to approve or disapprove a drug

for listing in the Formulary, irrespective of the recommendation of the DQTC. Such discretion, with no onus on the Cabinet to state the basis of its decision, encourages the sort of lobbying mentioned earlier and illustrated with respect to the listing of Apo-Salvent. This is particularly the case since the DQTC decision is not published. The Cabinet thus has an important role in maintaining the credibility of the DQTC.

Nevertheless having said this there are a number of in built mechanisms that provide some ongoing safeguards with respect to ensuring that the published rules, regulations and procedures are followed. Manufacturers whether with respect to a submission for an interchangeable or single source product can take the government to court or appeal to the Cabinet that procedures are not being followed. This has happened in the past, where the evidence suggested some unfairness in the application of the rules between manufactures as well as questionable procedures within the DQTC on a small number of occasions.[10] Less satisfactory manufacturers they can also lobby on the basis unrelated to the published criteria. This has been done on a number of occasions in the past by both large and small manufactures. Furthermore, since the members of the DQTC are part time having full time appointments elsewhere they have a considerable degree of independence. As such they can resign if they feel that their advice is not being heeded by the powers that be, as Dr.

Carruthers did. However, procedures which prevent such drastic steps would seem preferable.

One test was performed to evaluate the criteria used by the DQTC in testing drug products. For 1989, for two high volume therapeutic classifications, cardiovascular and central nervous system drugs, the price of the first interchangeable brand was compared to that of the originator when the first interchangeable brand was listed in the Formulary (i.e., either January or July 1989). Listing the first interchangeable brand is likely to be a decision of some significance and hence price reduction might be expected to play an important part. After all, why expend public funds certifying a brand as interchangeable when it offers no price reduction. Of all the areas where price would seem to be an important factor this would seem the most transparent.

The price ratios in Table 4-4 show that the price of the first interchangeable brand relative to the originator's price varies considerably. In the case of all the brands introduced by Apotex, with the prefix Apo on the brand name, the price is 73 to 79 per cent that of the originator. However, for the four brands in the table from Rhodis to Triazolam, the price ratio varies from 0.88 to 1.01. These are all cases where the first interchangeable brand listed is likely a fighting brand -- introduced by the originator directly through a subsidiary or a license agreement in anticipation of market entry by one of the two large generic

firms -- Apotex or Novopharm. In one case however, Triazolam, the price discount was more than 10 per cent, but in the other instances virtually zero. While the issue of fighting brands is discussed further below it is not clear what purpose is served by including brands which offer no discount to the ODB or the Ontario consumer. It is difficult to square this with the idea cost is an important consideration in listing drugs.[11]

Special Authorizations

The Formulary has a number of objectives. One of these is to certify that the products listed are of acceptable quality. This is stated explicitly both in the Terms of Reference to the DQTC (Figure 4-1) and in the Formulary itself (see above). It has been a constant theme of government intervention in the Ontario drug market (Chapter 2).

One indicator of the success or confidence practitioners have in the ability of the Formulary to meet the quality assurance objective is the use, under the ODB, of Special Authorizations. Ever since the advent of the ODB in 1974 there has been provision for the payment of drugs not listed in the Formulary -- the Special Authorization Program. The original aim of this program was "for use in rare instances where drug products not listed in the Ontario Drug Benefit Formulary were considered necessary for the care of a particular eligible patient" (Pharmaceutical Inquiry

of Ontario, 1988b, p. i). However, the program grew substantially (ibid., p. 7).[12] In March of the four years 1986 to 1989 Special Authorizations accounted for about one in every fifty drug claims and about one dollar in twenty five spent by ODB on all drug claims (Table 4-5). In 1988 total ODB expenditure on such Special Authorizations was about $25 million. By July 1988, while there were nearly 2,500 drug products listed in the provincial Formulary, the Special Authorization list was 1,600. Not all of these drug products were small dollar amounts — in 1988 ODB claim expenditures on five exceeded $1 million. In the words of the Lowy Commission this list had become "a second "mini-formulary"" (ibid., p. 8). Such an explosive growth would suggest that the use of Special Authorization as rare instances was no longer a suitable description for the program. No change in program objectives would appear to account for this change.

There are a number of reasons for the growth of Special Authorizations. First, drugs that have been rejected for inclusion in the formulary by the DQTC because they are judged to be of very limited therapeutic value have been included in SA. (ibid., p. 8). In this respect Carruthers, former Chairman of the DQTC, cites several examples of ineffective drugs being included in SA's, despite advice to the contrary by the DQTC. (McLaren, 1988). Apparently in one case the drug company concerned actually advertised the SA method to encourage physicians to prescribe that brand. A second reason for the rise in SA's is that some

manufacturers when introducing a new drug do not apply for listing in the Formulary, thus denying the possibility of any generic listing. Thus, "only the original and unlisted product is available widely and paid for by the taxpayer through the highly permissive Special Authorization Program." (ibid., p. 9). Third, the procedure for issuing the special authorization numbers -- required before the Ministry of Health will reimburse for the drug -- has changed making is much easier to obtain. Apparently in earlier times there was an attempt to "establish a rationale prior to the issuance" by the Ministry (Ontario College of Pharmacists, 1988, p. 11).

Thus we can suggest that although the idea of SA was sound in practice the lack of a rational policy underlying the SA process made its implementation somewhat of a sham. There were no proper administrative checks. It undermined both the legitimacy of the DQTC, the government's own cost control mechanisms as well as interchangeability. Dr. Carruthers in his January 18, 1988 letter of resignation to the Minister of Health did not mince his words on the SAs. "The absurd Special Authorization system which squanders millions of dollars annually, in large part for drugs which have little or no proven therapeutic value." It would appear that his view has largely been indicated by subsequent events. In the second quarter of 1989 changes to the SA system began to be introduced. The DQTC reviewed such drugs and reduced the number from 1600 to 200 (Ontario, Ministry of Health,

1989d, p. 1). However, further discussions of solutions and options are left to the next section.

Interchangeability

The Formulary is the key document that certifies two or more brands of the same drug are interchangeable. In other words, all of the brands listed for a given drug dosage form and strength are perfect substitutes, in that they have the same therapeutic effects. This reflects the fact that one of the major objectives of interchangeability is to encourage the dispensing of lower-cost brands.

One indicator of the degree of acceptance by the medical profession of interchangeability is the incidence of "no substitution" prescriptions. Such prescriptions specify that a particular brand, usually the higher priced originator's brand, be dispensed. In order for this to occur under the ODB the prescriber must complete a special form, a PC34. However, this would not appear to be an especially onerous task, given the limited information required. Such no-substitution prescriptions not only undermine this cost control objective, but also is consistent with the view that medical practitioners lack confidence in the DQTCs judgement concerning interchangeability.[13]

Overall no-substitution prescriptions are of little importance for the ODB measured:

- in terms of their share of ODB claims (Table 4-6);
- in comparison with the non-ODB market;[14] and
- in comparison with at least some other provinces where the rate goes as high as 25 per cent.[15]

Nevertheless, it would be incorrect to infer from these data that no substitution prescriptions pose no problems for interchangeability and the ODB. First, the data in Table 4-6 suggest that no-substitution prescriptions are of increasing absolute and relative importance, having increased in both dimensions in virtually every year since 1981/82 to 1988/89 with particularly large increases in the last two years or so. Second, although no substitution prescriptions account for less than 1.5 per cent of ODB drug expenditures this, in 1988/89, was nonetheless worth about $15 million.[16] Third, it could be argued, that in considering the importance of no substitution prescriptions the context should be relative to the population of interchangeable drugs. In other words, single source and non-interchangeable drugs should be excluded.

In order to clarify these issues the importance of no substitution prescriptions presented in Table 4-6 can be written as follows:

$$NS = \beta \frac{ID}{ID + SS + NI} \qquad (4.1)$$

where,

β = the proportion of all interchangeable drug claims (or dollar volume) accounted for by no substitution prescriptions.

ID = the number claims (or dollar volume) of interchangeable drugs

SS = the number of claims (or dollar volume) of single source drugs

NI = the number of claims (or dollar volume) of non-interchangeable drugs.

The term β will vary between 1 -- all interchangeable claims are no substitution -- to 0 -- there are no claims which are no substitutions. The denominator of NS is just the total number of claims (or dollar volume) paid by the ODB per period of time.

An examination of NS reveals a number of possible reasons why it could have increased over time. These include:

- physicians decide, other things being equal, to write more no substitution prescriptions. In this case β would increase.

- the relative importance of drugs designated as interchangeable increases, other things being equal. In this case ID increases at a faster rate than SS and NI. This could occur for at least two reasons: first, more drugs are designated as interchangeable in the Formulary; and second, the relative importance of those drugs already designated as interchangeable increases.

- There could be a rise in both β and the relative importance of ID. This could occur, for example, if a number of new drugs were listed as interchangeable and for these drugs no substitutions were higher than normal, until physicians became familiar with the newly listed brand.

The importance of multisource drugs does not seem to have shown a marked trend in the last few years either up or down (Table 4-3). This suggest the rise in NS may be due to an increase in β.

In order to investigate further the issue of the dramatic change in the number of no-substitution claims a small sample of highest dollar volume drugs was selected -- those accounting for approximately one-third of ODB expenditure. Two dates were selected, March 1987 and March 1989, thus ensuring the big jump recorded in Table 4-6 is caught. The sample was 30 drugs in 1987 and 32 in 1989, accounting for 34.6 and 34.5 per cent of ODB dollar expenditures, respectively. A separate drug refers to all

claims for a particular dosage form and strength such as cimetidine 300 mg tab., rather than all dosage forms and strengths of a given drug.

A summary of the results of using this sample is presented in Table 4-7. The results, measured in dollar volume, rather than number of claims, shows a dramatic increase in the dollar volume accounted for by interchangeable drugs, from 22.4 per cent to 56.2 per cent. This increase was mirrored in the number of drugs that were classified as interchangeable, from 10 out of 30 to 17 out of 32. If the only change that had occurred between 1987 and 1989 was the increase in the dollar volume of interchangeable drugs then NS would have increased from 0.71 to 1.77 per cent. Table 4-7 also shows that the value of β increased between 1987 and 1989 from 3.15 per cent to 5.69 per cent. If the only change that had occurred between 1987 and 1989 was the increase in the proportion of the dollar expenditure on interchangeable drugs accounted for by no-substitution claims, then NS would have risen from 0.71 to 1.27.

Thus, it would appear that the most important factor causing the increase in the importance of no-substitution claims was the fact that some leading drugs, such as ranitidine HCl 150 mg tab., diltiazem HCl 30 mg and 60 mg tab., nifedipine 10 mg cap., triazolam 0.125 mg tab., atenolol 50 mg tab. and timolol maleate 0.5 % Oph. Sol., changed from single source to

interchangeable, rather than physicians deciding to increase the incidence of no-substitution claims on a given set of drugs. The rise in β from 3.15 per cent to 5.69 per cent may thus be seen as temporary as physicians and patients get used to the newly listed interchangeable brands. These developments then suggest interchangeability is working and that there is little need to worry.

While the above interpretation of Table 4-7 is undoubtedly substantially correct it needs some qualifications. The mean value of β for 1987 and 1989 hides a considerable variation across drugs with respect to the importance of no-substitution claims. In Table 4-8 all interchangeable drugs used in Table 4-7 for which the proportion of ODB expenditures accounted for by no-substitution claims was 4 per cent in either March 1987 or March 1989 are presented, together with an indication of the significance of no substitution claims. This table has some disturbing implications.

For the three drugs for which data is presented in the table for 1987 and 1989, in all three instances the importance of no substitution claims increased, dramatically in the case of psyllium mucilloid oral Pd. otc 340 mg Pk. This, despite the fact that in all three had been interchangeable since at least February 1984. This suggests that the assumption made above that the importance of no substitution claims on newly designated

interchangeable drugs, such as those listed in Table 4-8 for 1989, will gradually fall need not occur.

This development is disturbing. It is consistent with physicians losing confidence in the DQTC based on their own experience. However, there seems little evidence of this, in that the brief of the Ontario Medical Association (1988) mentions no sudden loss of confidence in the DQTC and interchangeability. It is also consistent with drug manufacturers launching campaigns to encourage the use of no-substitution by the physicians. According to the briefs of several firms to the Pharmaceutical Inquiry of Ontario there has been a concerted campaign by at least some major drug firms, typically the originator, to undermine confidence in the generic drugs[17] -- a so-called "smear and fear" campaign.[18] However, the firms conducting such campaigns in their briefs to the Commission do not challenge the DQTC's decision concerning interchangeability, giving some credence to the view that it is a smear and fear campaign designed to sow doubt in the prescriber's mind, who will then prescribe the brand name product and complete a PC34.

An alternative approach to examining the issue of no-substitution claims, interchangeability and confidence in the DQTC's judgement is from the view point of the prescriber. A general disenchantment would be revealed in a uniform level of no substitution claims for all prescribers such as shown in

Table 4-6. Alternatively the same overall no-substitution rate would be consistent with a general acceptance of DQTC recommendations by the vast majority of physicians in Ontario, except for a relatively small number of prescribers with an exceptionally high propensity to write no substitution claims. The issue cannot be addressed directly by examining individual physician prescribing habits.[19] Resort to a useful proxy can, however, be made.

For each pharmacy account in Ontario the number and dollar volume of all and no substitution ODB claims is available. Thus the proportion of all claims, by pharmacy, that are no substitution can be estimated. This is probably a reasonable proxy for the no substitution propensity of physicians in the immediate vicinity of a pharmacy. Recall that ODB beneficiaries have no co-payment so convenience is likely to be the major factor in pharmacy selection. One shortcoming of the ratio is that it will bias toward finding a uniform level of no substitution prescribing. If one pharmacy is where the patients/consumers of several prescribers take their prescription and each prescriber has a different no substitution propensity then the pharmacy average will not reflect the high and low propensity prescribers.

Table 4-9 presents a frequency distribution of the percentage of all ODB claims that are no substitution. Unfortunately historical data for the mid to late 1980's is not available, only for the

period May-Oct., 1989. Nevertheless, the table permits a number of useful inferences to be drawn. Overall, the trend noted above of the steady rise of no-substitution claims continues. In 1988/89 these claims accounted for 1.3 per cent of all ODB claims; in May-Oct. 1989, 1.8 per cent, a substantial jump.

Table 4-9 does not reveal a uniform level of no substitution claims. In other words, not all pharmacies are observed with no-substitution propensity of 1.500-1.999. Indeed, only 10 per cent of all pharmacies accounting 13 per cent of no substitution and 14 per cent of all claims, falls into this range. The vast majority of pharmacies, accounting for 54 per cent of all claims, had no substitution rates of 1.5 per cent or less. In contrast, there was a relatively small percentage of pharmacies with rates in excess of 2 per cent accounting for 64 per cent of all no substitution claims but only a third of all claims. This distribution tends to favour a view that DQTC judgement are generally accepted, except for a minority of prescribers.

In sum, there is some evidence that for certain drugs there are very high no-substitution rates. When combined with considerable dispersion of no-substitution rates by prescriber -- as proxied by pharmacies -- this suggests that for some prescribers for some drugs that there are very high no substitution rates. This would seem an undesirable outcome.

How Good is the BAP?

The BAP was introduced as a method by which Formulary prices would reflect actual transaction prices, net of any special deals, concessions and so on. Success at such endeavours would remove the longstanding criticism of Formulary prices that they were, particularly for high volume interchangeable products, much higher than transaction prices even for the package size purchased by the typical pharmacy. In determining whether indeed BAP has eliminated the spread comparisons will be made in pre and post ODB drug prices as well as with at least one other jurisdiction in Canada that was used as the benchmark for comparison by the Provincial Auditor in Ontario in the early 1980s. Unfortunately we have no reliable guide to the size of the price spread prior to the implementation of BAP with which to use as a benchmark and hence have to resort to these less than fully satisfactory proxies. Nevertheless, the Ministry claim that its magnitude was $30 million. (Ontario, Ministry of Health, 1988c, p. 12).

In examining the trend in ODB drug prices over time, two samples were selected covering the first half of 1986, 1987 and 1989. The samples were the ten highest dollar volume single and multiple source drugs in March 1986. In that month these twenty drugs accounted for 25.2 per cent of dollars paid by the ODB; the single source sample 15.7 per cent, the multiple source sample, 9.5 per

cent. The samples are detailed in Table 4-10, with some summary statistics in Table 4-11. They were selected for several reasons.

One would expect that the Ministry of Health would put much more effort and resources into determining the size of the spread with respect to the high volume drugs, since the potential dollar savings are likely to be, other things equal, highest for these items. The multiple source sample was selected because the concern in the late 1970s and 1980s over the price spread focused on such drugs. Nevertheless, single source drugs are of interest in that they provide something of a control group. Furthermore, the manufacturer of a single source drug has a monopoly on the sale of that drug and thus his main demand is generated by advertising to the physician, rather than cutting price to the pharmacist or wholesaler. Thus the single source prices are unlikely to fall because of BAP. Finally, several years of prices are used in order to examine both the long and short run influence of BAP. In the past, as noted in Chapter 2, successful attempts had been made initially to reduce prices to eliminate the spread, but it had nevertheless reemerged as time passed.

Drug prices are provided, in Table 4-10, for the two drug samples for the first half of 1986, prior to BAP, and the first half of 1987 and 1989, immediately after the introduction of BAP and several years later. One difficulty is deciding which price should be used. Prior to BAP the drug price in the Formulary

included a wholesaler's margin of 10 per cent, if the drug was distributed in such a manner, otherwise no such allowance was made. As noted, with the BAP, 10 per cent is added whether the drug is distributed direct or not, while the BAP in some instances includes a distribution margin and in other not. In general not knowing if a drug in 1986 or any year was wholesale or direct, we simply compare the Formulary price in 1986, with the BAP plus 10 per cent in 1987 and 1989. This is somewhat arbitrary. However, as noted in Chapter 2, one of the objectives of the 10 per cent mark-up was to reimburse for distribution costs, so the comparison is not entirely inappropriate. In any event the details are presented in Table 4-10 so the reader can easily make any alternative assumptions and see if the results are affected.

The overall impression left by Tables 4-10 is that single source drug prices increased substantially in price between 1986 and 1987; multiple source drugs decreased in price. The summary statistics in Table 4-11 confirm this, with the difference in mean level of the ratio of 1987 to 1986 single and multiple source prices being highly statistically significantly different. BAP appears to have had, at least in the short run, the desired effect on multiple source drug prices. Furthermore, it appears to confirm the Ministry's claim that "the "spread" on multiple-source listings was virtually eliminated" (ibid., p. 12). It is also consistent with the results in Table 4-3 that shows the average price of a multiple source drug in the ODB fell from $4.59 per

claim in Jan-June 1986 to $3.35 per claim in Jan-June 1987. These findings were confirmed by the author in a number of meetings with industry personnel, both from the generic and innovative sector.

Every single source drug in Table 4-10 increased in price between 1986 and 1987. While the average increase was 17.7 there was considerable variation (Table 4-11).[20] The largest price increase was for digoxin 0.125 mg tabs of 35.4 per cent; the smallest of 9.6 per cent for diclofenac sodium 50 mg Ent tab. In contrast, every single multiple source drug except two fell in price. The average ratio of 1987 to 1986 prices was 76.2 per cent -- substantial decline. Particularly noticeable declines were the two strengths of acetaminophen compound with codeine, both of which fell by more than half. Nevertheless two multiple source brands increased in price, glyburide 5 mg tabs and acetylsalicylic acid 650 mg Ent. tab. One reason for this may have been the fact that the generic houses -- Apotex, Horner and Novopharm -- were not competing on either brand, whereas at least one of them was on all the other multiple source products in the table.

In the past attempts to remove the spread, while initially at least leading to some reduction in price, saw the spread gradually re-emerge. Such a spread could emerge either because of the cost falling or price rising. Here we investigate only the price side of the equation. The price change between 1987 and 1989 is

estimated for the same set single and multiple source samples used to examine the initial change.[21] The average price increase for the multiple source 13.0 per cent; the single source 12.7 per cent (Table 4-11). At the 10 per cent level of significance these differences are insignificant. Similar results obtain if the four 1986 single source drugs which became multiple source by 1989 are excluded from the 1989/1987 comparisons (Table 4-11, bottom panel). In sum, there was a once and for all price decrease for multiple source; and a once and for all increase for single source and then relative stability. The stability reflects the policy of the Ministry of Health of using the CPI as a guide to determine whether price increases are excessive.

A second indication of the success in BAP in removing the spread is a comparison of Ontario prices with those in another jurisdiction, where it is felt that no spread exists. In the past the Ontario Provincial Auditor General has selected Saskatchewan as an appropriate benchmark. In this province for high volume multiple source drugs the drug price is set on the basis of a competitive tender. Every six months such Standing Offer Contracts are awarded. The winner's brand (or in some cases the two lowest priced brands) then provides all the province's needs of that drug for that period, except, of course, for any stock left from the previous period. The brand awarded the SOC is then distributed via approved wholesalers to provincial pharmacies.

In order to ascertain whether the BAP has eliminated the difference between Ontario and Saskatchewan drug prices for multiple source drugs, a price comparison was made using initially the ten highest dollar volume multiple source drugs funded by the ODB. Since for two of these there was no SOC either or a interchangeable brand, the sample was extended so that the sample for purposes of comparing price was 10. The results are presented in Table 4-12.

The price for Ontario is the BAP, for Saskatchewan the SOC plus the 11 per cent distribution charge which must be incurred on all drugs in Saskatchewan since the wholesalers must be used for distribution. The price printed in the Saskatchewan Formulary includes the wholesale margin, according to Saskatchewan drug plan officials. In the case of Ontario the BAP will probably include the distribution charge to the pharmacist, since multiple source drugs where the generic firms usually hold a large market share, are typically distributed directly to the pharmacist. Virtually all of the sample in Table 4-12 are dominated by such firms. Hence, the BAP is compared to the Formulary price in Saskatchewan, inclusive of the distribution charge.

On average across the ten multisource drugs for which price data is presented in Table 4-12, prices in Ontario were 5.1 per cent higher than those in Saskatchewan. Nevertheless, in one case there was vertically no difference (glyburide 5 mg tab) and in

three the price was higher in Saskatchewan than Ontario. The Ontario price was highest relative to Saskatchewan for hydrochlorothiazide and triamterene 25 mg and 50 mg tab (28 per cent higher) and lowest for acetylsalicylic acid 325 Ent. tab. (0.82). Overall, the hypotheses that the Saskatchewan and Ontario prices were the same could not be rejected at the 10 Level.[22]

These results contrast quite markedly with those found by the Ontario Provincial Auditor in 1984 who stated:

> We also compared the drug prices in the Saskatchewan Formulary with those in the Ontario one for the aforementioned [30 high volume drugs], 29 of which were in both Formularies. The comparison indicated:
>
> | | No. of Drugs | Saskatchewan Lower | Ontario Lower |
> |---|---|---|---|
> | July 1983 | 29 | 27 | 2 |
> | February 1984 | 29 | 25 | 4 |
>
> As at July 1, 1983 the price of these drugs was in many cases at least twice as much in the Ontario Formulary than in the Saskatchewan Formulary. Despite the fact that a price reduction was effected in the February 1984 Ontario Formulary, we found that 25 of the 29 drugs were still priced higher than in the Saskatchewan Formulary for January 1984, of which 6 were more than 70 per cent higher. (Archer, 1984, p. 85).

Although the sample used here is only 10 not 30 drugs the differences between Saskatchewan and Ontario are much lower than those observed by the Provincial Auditor four years ago. Thus, it

would appear that Ontario has successfully reduced the inequality of prices between itself and Saskatchewan.

Two caveats should be borne in mind when comparing Ontario and Saskatchewan prices. First, Ontario is a relatively large market, Saskatchewan small. Therefore, to the extent that Ontario looks at Saskatchewan prices in setting BAP, this may result in firms setting the same price in both markets, rather than quoting lower prices in one market than the other. Second, what is being compared is the BAP in Ontario with the SOC in Saskatchewan. This need not equal the average drug cost paid by the province's drug plan to the extent that no-substitution prescriptions are written for more expensive brand names. This would appear to be much more of a problem in Saskatchewan than Ontario. (Gorecki, 1981, 1985; New Brunswick, Commission on Selected Health Care Programs, 1989, p. 73). Thus average prices paid in Saskatchewan are probably higher than Ontario. To the extent they are the result of the SOC system this suggests it may be somewhat self defeating. However, according to officials in Saskatchewan the recently introduced co-payment system is reducing though not eliminating such no-substitution prescriptions.

The results in this section are consistent with view that the BAP has successfully eliminated the spread. While the consensus and evidence would appear to support the case that the spread was initially eliminated, as in the two previous attempts to remove it

in 1979 and 1984, there is also the suggestion that the spread has reappeared. Evidence is difficult to gather on this,[23] which is why extra powers were given to the Ministry of Health under the 1986 legislation. Nevertheless, it is a concern that should not be omitted in considering in options and alternatives.

Do the Price and Product Selection Rules Work?

The price and product selection rules are designed to ensure that the ODB pays the lowest price possible, consistent with quantity assurance, of the drugs dispensed. The success of these rules depends upon:

- the diligence and thoroughness with which the DQTC conducts its duties;

- the success of BAP at listing actual or transaction prices; and

- the degree of competition in the marketplace.

These issues have all been discussed above, and while there are a number of areas for improvement, the system seems to be working reasonably well. This, therefore, implies that the price and product selection rules are likely to be working reasonably well.

One condition for the success of the price and price selection rules, with respect to interchangeable products, is that firms competing with the originator's brand are able to capture a reasonable portion of the market, so as to earn a return. In other words, the greater the probability that these firms can capture significant market share, the higher is the probability they will invest in the process, machinery and so on of competing with the originator. The evidence for a small sample of high volume drugs that became interchangeable in January 1989 suggests the first interchangeable brand is able to capture a very large portion of the market within a very short time. This is consistent with evidence for the ODB for earlier time periods (Gorecki, 1986a, 1987a).

The numbers in Table 4-13 are, in some ways, quite remarkable. They show that within an extremely short time the originator loses a very large share of his market. Typically, the drug concerned will account for a significant percentage of the brand name firm's sales and profits. Not surprisingly, when faced with such challenges the originator has developed various strategies to retain market share and deprive the first (and subsequent) interchangeable brands market share. These strategies include the following.

- Long Acting Dosage Forms. Shifting demand to a dosage form that is not subject to competition from an interchangeable

brand, typically long acting or slow release. This has been alleged with respect, for example, to diltiazem as well as nifedipine (Novopharm, 1988, pp. 6-7). In the case of diltiazem and nifedipine the long acting dosage form is listed for a different indication. It has been Ontario government policy since the early 1980s not to list long acting dosage forms drugs as interchangeable, although isosorbide dinitrate is an exception (Ontario, Ministry of Health, 1989 c, p. 43).

- Product Differentiation. Undermining confidence in the judgement of the DQTC with respect to its verdicts on interchangeability by suggesting two brands are not really interchangeable. It should be noted, at least in the material this author has seen, that such literature does not say under what conditions the brand name is preferable, but rather suggests differences exist and thus this means that the brand name should be prescribed. This tactic was discussed above and appears to have had some success.

- Fighting Brands. Originators are launching fighting brands to compete with the generic with the intention of denying market share. In some instances, the fighting brand is launched prior to the entry of the generic -- in Table 4-13 the first interchangeable brand of triazolam is that of subsidiary of the originator. In some cases, these firms enter at a price discount but in others the DQTC lets them enter at a higher

price than the originator e.g., Rhotrimine 75 mg cap. in Table 4-4. The incidence of fighting brands is increasing with one or two of these firms launching such brands for more then one originator firm. (Canadian Drug Manufacturers' Association, 1989).

These developments are likely to reduce the impact of the price and product selection rules. Carried far enough the fighting brands have the potential to severely affect the generic industry and thus the costs of ODB.

Is the Distribution System in Trouble?

Prior to 1986 the ODB paid 10 per cent on top of the manufacturers price if the drug was distributed via a wholesaler; however, if the drug was distributed directly by the manufacturer or via an agent, which did not take title to the goods, then no such wholesale margin was added. This system worked well for sixteen years in that it was not referred to as a problem in any of the inquiries or commissions on the retail drug industry in Ontario discussed in Chapter 2. Furthermore, it had the built in advantage if firms switched to direct the wholesale margin would disappear and vice versa. Hence, it had a certain amount of flexibility in that the play of market forces could have an important part to play in determining the distribution pattern.

The 1986 legislative change resulted in the 10 per cent wholesale charge being added to drugs that were formerly distributed direct by the manufacturer or via an agent. This provided an incentive for pharmacists to purchase direct where possible. Consider the pharmacist's options:

- the pharmacist could purchase from the wholesaler, which charges 8 per cent on BAP, leaving the pharmacist with 2 per cent.

- the pharmacist could purchase direct or via an agent at the BAP. Because of the extra paperwork involved, carrying larger inventories, the pharmacist might have to bear costs equal to 4-6 per cent of BAP, leaving him with 6-4 per cent.

Hence, the 1986 change encouraged the pharmacist to switch away from the wholesaler to the direct from manufacturer.[24] Under the pre 1986 system this would eventually have resulted in the removal of the 10 per cent added on top of the manufacture's price; not under the new system.

These incentives have put pressure on manufacturers to go direct or via an agent to sell to the pharmacist. The pressure would likely be particularly acute on multi-source drugs where if one manufacturer went direct and increased sales substantially this would encourage other manufacturers to follow suit. In the case

of single source products pharmacists would be able to exert less pressure and the manufacturer would have less incentive to go direct or via an agent. Several manufacturers tried to have their BAP adjusted upward to include an agency agreement -- distribution by an agent. As noted this was one of the factors that led the ODB to use the CPI as a guide to "excessive" price increases and, at the same time, request manufacturers not to change distribution modes. It would seem that the sensible intention of legislature in 1986 to help smaller remote pharmacies by extending the 10 per cent margin had unintended side effects.

OPTIONS AND ALTERNATIVES

In many ways the system of controlling drug costs in Ontario is quite remarkably successful. Nevertheless, this very result has led to offsetting developments designed to undermine this success. At the present time these developments, apart from Special Authorizations, have largely been left unchallenged. This state of affairs should not be allowed to continue. In other respects the system has seen the introduction of measures with desirable objectives, but have ended up having unintended adverse side effects, such as the 10 per cent on top of the BAP. Finally, aspects of drug control seem to run counter to the basic incentives of the participants thus causing persistent problems. This is particularly true in the price setting system with respect

to pharmacists. Each of these three sets of issues is dealt with separately.

The Role of the DQTC

The DQTC plays a pivotal role in the drug system in Ontario not only with respect to the issue of quality assurance but also in terms of controlling drug costs. It makes decisions of considerable economic and medical importance. The decision not to list a drug an eligible benefit will not only likely mean lost sales to the manufacturer but also prevent a drug offering little advantage over existing products coming on the market. Equally a decision to list a product as interchangeable can result in the originator losing virtually all of his ODB market. Decisions on these issues are frequently difficult with, the professionals putting their reputations on the line with decisions that not only have cost but also health implications.

There are a number of areas where supportive measures can enhance the role, effectiveness and environment within which the DQTC operates. Although they all touch in varying degrees on other aspects of the ODB their relationship to the DQTC is of considerable importance. As a result these issues are all treated in relation to the DQTC. The implementation of these measures

will likely result in better health and cost control for Ontario. These measures are discussed below.

Reforming Special Authorizations. One of, if not the, key decisions that the DQTC makes is whether or not to recommend that a drug should be included in the Formulary as an eligible benefit. As noted the system of Special Authorizations was introduced for those rare instances where a drug not listed in the Formulary was considered necessary in a particular situation. However, while the objective of the system was sound in theory, in practice it became very permissive with little if any control over drugs admitted to the SA list or their total volume for reimbursement purposes. In other words, the SA practice had become inconsistent with SA objectives. Reforms are thus needed to establish a certain congruence between practice and objectives.

A sensible package would have several elements. First, a system of approving drugs for admission to the SA list and the particular medical conditions under which they are to be used. The DQTC would seem to be the obvious body in this respect. Second, establish procedures to ensure that the SA drugs are indeed used for the purposes set out by the DQTC. This might require some paperwork by physicians and/or random checks on their use by Ministry of Health/DQTC personnel. Third, at the present time drugs on the SA list cannot be made interchangeable. While many of these are low volume sellers and unlikely to attract the

investment required for the marketing of an interchangeable brand this is not the case of all SA's (see Apotex, 1988). Hence, it would seem reasonable that interchangeability be extended to SA drugs.

The aforementioned reforms have the potential to:

- improve the quality of care;
- enhance the role and effectiveness of the DQTC; and
- in some instances introduce a lower priced interchangeable brand.

Overall expenditures may however go up if a prescriber is denied an SA product and has to go to a more effective/appropriate alternative.

Strengthening the Authority of the DQTC. The DQTC has been making recommendations concerning interchangeability since amendments were introduced to the Pharmacy Act in 1972 -- nineteen years ago. Large portions of the ODB population have been shifted from one interchangeable brand of a given drug of a particular dosage form and strength as a result of this policy. Yet, as far as I am aware, there is little or no evidence of adverse health effects. The briefs to Pharmaceutical Inquiry of Ontario and the earlier federal Commission of Inquiry or the Pharmaceutical Industry do not contain documented instances of the adverse health

impacts of interchangeability. The province of Ontario is not constantly having to pay damages because of interchangeability problems. Indeed, it has never had to pay such a claim. Successive inquiries in Ontario have commended the judgement and expertise of the DQTC. The lack of problems with interchangeability is like the dog that didn't bark in a Sherlock Holmes story.

At the present time, and for the past few years at least, it appears that some drug firms have been casting doubt on the efficacy of the less expensive products listed in the Formulary as interchangeable with the more expensive one. This has been in direct communication to pharmacists and physicians and no doubt is partly responsible for the level and, in some instances, increases in no-substitution claims. In one such instances communication was directly with the patient/consumer.

The public purse pays for a body of experts to make judgements about interchangeability. If drug companies have doubts about such interchangeability it seems reasonable that they should be taken to that body, not directly to physicians, pharmacists or even patients/consumers who are frequently not qualified to make judgements as to whether slight differences between two brands invalidates therapeutic equivalence. Failing that periodic review of the operation of ODB such as the Pharmaceutical Inquiry of

Ontario or, in extreme circumstances, the courts are other avenues that could be used.

At the present time, it is not clear that no substitutions are being used in an appropriate fashion as the previous discussion and these examples illustrate:

- Is it really necessary, on medical grounds, that one in eight claims for an OTC laxative be no substitution at a cost of $8.75 compared to $4.70?

- Can one really credit that one in sixteen claims for cimetidine 300 mg tabs are no substitution on medical grounds when the evidence suggests that such a drug is "inappropriately prescribed in a significant percentage of cases." (Medical Reform Group, 1988, p. 49).

- Was it really necessary, in early 1989, on medical grounds, for one in hundred claims for triazolam 0.125 mg tabs to be no substitution for Halcion, when the only other brand listed as interchangeable was made by the same firm?

If one accepts the basic premise that the DQTC's judgement is sound then it is clear the issue of "excessive" use no substitution needs to be resolved so that judgement is respected.

There are a number of steps that could be taken to ensure that no-substitution prescriptions are being used appropriately. These include:

- Better communication between the DQTC and the medical professions concerning the decisions with respect to interchangeability. At the present time no such channel is available. It is true in a few cases that the Ministry of Health did circulate information assuring interchangeability to counter concerns raised by the questioning of some firms of DQTC decisions.

- Consider whether legal action is an option either under provincial or federal statutes relating to health and/or misleading advertising in Canada's Competition Act.

- Making the patient/consumer pay the difference between the lowest cost BAP and the no-substitution brand. The difficulty with this is that it might do little to curb the use of no-substitutions but merely transfer the cost from the public to the private sector.

- Identifying those physicians which prescribe more than (say) 2 per cent of a given drug as no-substitution. Since each no-substitution prescription is accompanied by a PC34 presumably the physician can be identified. If the physician cannot

explain why on medical grounds he is prescribing no-substitutions then the difference between the lowest BAP and the no-substitution brand, doubled, be deducted from his OHIP payments.

- modify the PC34 so that the physician is required to specify the medical grounds upon which a no substitution prescription is being used. This will not only force the physician to think through his action but also will provide a valuable feedback to the DQTC which should review such occurrences and perhaps address any concerns in a newsletter.

These options all have the potential to yield relatively high returns for low expenditure. Furthermore whether the cause of no substitution is disinformation by brand name manufacturers, ignorance of DQTC decisions, prescribers "rewarding" brand name firms because they undertake R&D or problems with DQTC decisions, these options should resolve the issue successfully.

Communicating With its Public(s). The DQTC makes decisions with respect to more than interchangeability. It also may decide not to list products or place them on the Special Authorizations. As the present time the DQTC has no method or vehicle of communicating with health professionals about such decisions. Indeed, one of the grounds that the former Chairman of the DQTC resigned was because of "the lack of an effective communication and information system between the DQTC, the prescriber and

public". This should be rectified and the DQTC given such a vehicle. It might also prevent some of the efforts by some manufacturers to undermine interchangeability.

Good Administrative Practice. The DQTC makes decisions involving millions indeed tens of millions of dollars. Bodies which normally make such decisions are independent regulatory agencies such as the National Energy Board. In the present case such a body with numerous delays and procedures would seem undesirable. Nevertheless, one change which might be worthwhile are stricter guidelines concerning conflict of interest, security and confidentiality. One model would be the draft regulations for the proposed federal advisory panel on bio pharmaceutics.

Clear Objectives. The DQTC is an advisory body that makes recommendations based on medical evidence, and, to a lesser extent, cost. Its decisions may be appealed to Cabinet of Ontario which may reject its advice as not being in the public interest. The public interest is not defined. Administering policy is easier when the objectives are well defined. If the decisions of the DQTC are not accepted by Cabinet this is likely to undermine the credibility of the DQTC, frustrate those on the Committee, and perhaps reduce the supply of those willing to be appointed. Although DQTC recommendations are usually followed, several steps could be taken to maintain and strengthen that credibility:

- the Cabinet (or Ministry of Health) should present written public reasons why a DQTC recommendation is rejected or varied.

- the Cabinet could have a quite minimal role only proclaiming broad policy guidelines as the legislation provides for and let the DQTC administer them. If however, they are not followed the Cabinet would, of course, be forced to step in. Such procedural safeguards would not only maintain the credibility of the DQTC but also provide a shield to the Cabinet from unwelcome pressure from various interest groups.

Fighting Brands. As noted above generic firms such as Apotex have introduced interchangeable drugs at 73 to 80 per cent of the original firms product price; but fighting brands moving to pre-empt the generic are allowed to list for much lower if any discount. Since the only reason for adding an interchangeable brand is in the interests of lower prices the DQTC should pay careful attention to the discount such brands offer.[25] The DQTC is there to promote cost effective drug therapy, not as a tool of innovative drug company marketing strategies designed to thwart generic firms entering the market. This suggests that administrative policies should be formulated by the DQTC -- perhaps with the assistance of the Ministry of Health -- that

would result in such brands having to offer non-trivial discounts in order to be listed.

Is the End of Interchangeability at Hand? At the present time the incidence of originator or innovative firms launching, either directly through a subsidiary or via a subsidiary of another innovative firm, fighting brands is increasing. This is a situation which bears watching. Enough such brands combined with a price war could lead overnight to the bankruptcy of the generic houses. While such a scenario may seem a little far fetched, it is nevertheless worth keeping a close watch on. Indeed, it was considered in the 1970's by Hoffman LaRoche where deciding how to deal with generic brands of Valium. It was rejected however. (Gorecki, 1986b, pp. 172-73). The usual argument is that such predatory pricing does not work because the firm can re-enter once the price is raised. However, getting relisted in a provincial Formulary might take a little time and the innovative firm(s) might be able to recover the costs of bankrupting the generic firm(s). At a minimum, the Ministry of Health and the DQTC should monitor the situation and keep the federal Bureau of Competition Policy alerted to the situation.

Pricing Rules

One of the problems with the present set of pricing rules in Ontario is that they do not provide quite the right set of incentives for ensuring the lowest price for multiple source drugs. Where a manufacturer is competing with a rival, be it another generic, a fighting brand or the originator, what determines success is price. In the context of the ODB this refers to the price to the pharmacist not that printed in the Formulary. The latter price is what the manufacturer intends to sell at in several months time. If another manufacturer sets a lower price then frequently other manufacturers will match that price by submitting a revised price to the Ministry of Health. Under such a system, with several manufacturers selling at the lowest BAP, how is the pharmacist to select one brand over another? Not surprisingly such conditions give rise to secret discounts and free gifts such as TV's or trips to a holiday resort in order to command market share. Eventually the spread reappears. The situation can be likened to a price fixing agreement in which the lowest interchangeable BAP is the agreed upon price. Under such conditions powerful incentives operate to price discount. The ODB program is no different.

One solution to this problem, suggested by the Pharmaceutical Manufacturers Association of Canada (1988b) is Actual Acquisition Cost. Under this system: the pharmacist would be free to select

the brand to be dispensed subject, as at present, to the physician being able to write "no-substitutions" for a particular brand. The pharmacist would select the brand to be dispensed on the "basis of the best therapeutic interests of the patient rather than personal economic gain through price-spreading." (ibid., p. 11). The pharmacist would be reimbursed his actual acquisition cost.

There are a number of problems, however, with the AAC system:

- given the judgement and expertise of the DQTC combined with the physician's ability to write no-substitution prescriptions it is not all clear the pharmacist should have any say in brand choice.

- it is not entirely clear that AAC will eliminate the spread. Firms are very innovative at finding their way around various pricing systems and this will surely be no exception, with secret discounts, free gifts, and so on.

- there is little incentive for the pharmacist to stock and sell the lowest priced brand where a drug is made interchangeable. The market penetration of the lower-priced brands is thus likely to be slowed and the benefits to the ODB of price competition by generics reduced. Such an outcome will lower

the return to generic firms and may slow their entry into certain therapeutic classes or specific drug products.

- under AAC the pharmacist paid his actual acquisition cost whether he buys in 100's, 500's or 5,000's. Since inventory costs are likely to be lower for smaller package sizes, pharmacies for high volume (particularly multisource) drugs may decide to buy in smaller volumes. The effect would be to raise costs to the ODB but lower them to the pharmacist.

It thus seems AAC as presently structured to offer no advantages on the present system.

The discussion so far has been mostly theoretical. Some evidence has, however, been brought to bear on the issue of AAC compared to BAP. First, evidence submitted to the Nova Scotia Royal Commission on Health Care by PMAC (1988a). This showed that when Nova Scotia switched to AAC in July 1986 there was considerable evidence this eliminated the spread. However, the discussion presented here shows that where Ontario introduced the BAP a similar result occurred. Furthermore, a recent Nova Scotia Royal Commission on Health Care (1989, p. 117) report recommends moving away from AAC to a system similar to Ontario because AAC was "only marginally effective in encouraging the use of generic substitutes for brand name drugs." (ibid., p. 115). In New Brunswick the Commission on Selected Health Care Programs

(1989, p. 78) commented that AAC "may be the most costly of all alternatives". Second, evidence prepared comparing B.C., which has an AAC system, with Ontario. (Strong and Harvey, 1989). This suggested that if Ontario could replicate the results of B.C. then the ODB would experience an initial cost increase, using 1988 figures of $6.1 million. However, the authors felt that creating a competitive marketplace would lead to falls in both the brand and generic prices with the inference that this would offset the initial increase of $6.1 million. On balance, it would appear that there is insufficient a case to change to AAC.

Nevertheless, there is an issue that needs to be resolved concerning the price-spread. The suggestion in Chapter 3 that the fee is determined in a competitive market should ensure that any (or at least some) of the price-spread gets translated into a lower dispensing fee. Thus the competitive market for the dispensing fee is linked to eliminating the spread.

The Drug Distribution System

In the third quarterly report of the Pharmaceutical Inquiry of Ontario (1989a, p. iii) five criteria or principles were suggested as appropriate in dealing with the problems caused by the 1986 legislation.[26] They were:

- Prescribed drugs must be made available to all patients who need them, irrespective of their geographic location within Ontario, within a reasonable time.

- The manner of distribution of drug products, direct or indirect, should be revenue-neutral to pharmacists but should be determined by such factors as effectiveness and efficiency of distribution.

- The final recommendation should not require additional public funds.

- The recommendation to be made should not result in windfall "distribution profits" for drug manufacturers whose profits properly derive from the sale of the products.

- Distribution costs should be paid to those who incur them (ibid., p. iii).

The Inquiry considered several options and was satisfied with none of them (ibid.,pp. 14-16).

One option considered and rejected by the Inquiry was reversion to the mechanism that existed prior to 1986. This proposed solution saw the wholesale charge -- for those drugs that were wholesale oriented -- being added to BAP + 10 per cent. Not

surprisingly it rejected the proposal because it would lead to an increase in government expenditure.

One of the themes developed in this paper is that the 10 per cent margin was introduced in the Standing Committee on Social Affairs in 1986 to make sure that smaller pharmacies, particularly in remote areas, would suffer no financial disadvantage if they had difficulty in purchasing at the BAP. However, while such a sentiment would undoubtedly command much support, it is not clear that a windfall gain of at least $7,000 per pharmacy and wrecking havoc in the distribution system is the ideal solution. Far better to pay, as the Ministry of Health suggested unsuccessfully in 1987, smaller, remote pharmacies a slightly higher dispensing fee to ensure that they can buy at the BAP.

Thus the solution suggested here is as follows:

- pharmacists would be reimbursed at the BAP for those drugs distributed directly;

- pharmacists would receive the BAP plus 10 per cent when the drug is wholesale oriented; and

- increase dispensing fee for small remote pharmacies which might have trouble in buying the BAP.

This meets all of the five conditions set out by the Inquiry. It would, however, have the difficulties that the existing legislation would have to be amended.

CONCLUSION

In this chapter we have carefully described, reviewed and evaluated present policies for setting drug prices under the ODB and where relevant suggested options for improving the system. These changes are mostly in the nature of tinkering. Some such as the introduction of appropriate administrative procedures for special authorizations have already been introduced. Others still await the consideration of policy makers.

NOTES TO CHAPTER 4

1 Ontario, Ministry of Health (1989b, p. 5). A very brief overview of the activities of the DQTC may be found in Carruthers (1986).

2 Ontario Regulation 690/86 and Ontario Regulation 690/86.

3 Interchangeable pharmaceutical products have the same active ingredients and are of the same dosage form and strength. In addition, they must exhibit certain other characteristics such as the same bio-availability. Typically, this is with respect to the patentee or originator brand.

4 This discussion is based on a series of articles in the Toronto Star in late June and early July, 1989, by Janice Turner, and interviews with a number of the participants.

5 However, this may not have pleased other drug manufacturers, since they would probably have had to forego for seventeen days the revenue from the (usually) higher prices in the new Formulary.

6 Many hospitals have their own formulary committees and some of the larger ones even have their own formularies.

7 For details of this see Ontario Drug Benefit Act, 1986, section 16(1) and 18(2) together with section 12 of Ontario Regulation 689/86 made under the said Act.

8 These are specified in Ontario Regulation, 689/86, section 4. Prompt payment within 30 days of the sale of the product to the pharmacy can result in a discount of 2 per cent of the net price of the product without the BAP being affected; while payment can be delayed for up to 120 days by a manufacturer without this being considered a discount and the BAP changed appropriately.

9 The reverse does not obtain. If another brand of mebendazole to Vermox existed but was not in the Formulary then the pharmacist, on receiving a prescription for such a brand, could dispense Vermox instead. This would appear to be the interpretation of the PDRR Act, 1986 section 4(5).

10 Full details may be found in Apotex (1988).

11 At this time we do not have sufficient information to comment on the other two entries in the table.

12 The discussion in the text and Table 4-5 is restricted to Special Authorizations for drugs. In Pharmaceutical Inquiry of Ontario (1988b) the tabular material refers to SA drugs as well as allergens and oxygens, which are not discussed here since they do not fall within the remit of DQTC.

13 It is also consistent with the view that patients pressure the physician to prescribe such brands and/or that physicians have a preference for the originators brand -- because they support R & D -- independent of the quality issue and DQTC's judgement.

14 In a survey of 200 pharmacies undertaken for the Upjohn Company of Canada by Market Facts of Canada the overall Ontario no-substitution rate in mid 1988 was recorded as 6.65 per cent. See Market Facts of Canada (1988, p. 35).

15 New Brunswick, Commission on Selected Health Care Programs (1989, p. 73) states

> ...in New Brunswick... 25 percent of prescriptions are marked "no substitution", where as Saskatchewan has a comparable figure of 15 per cent, Manitoba 2 per cent and Ontario 1 per cent.

In earlier work referring to 1983 is appeared that Saskatchewan was the province with the highest no substitution rate, whereas now it appears to be New Brunswick (Gorecki, 1986a, p. 389).

16 This was derived by taking the average dollar "special" claim which includes both no-substitution prescriptions and special authorizations; deducting the average dispensing fee; and multiplying the answer by 472,849. It should be noted that the average cost of a special claim in 1988/89 was more than twice a regular ODB claim.

17 Apotex (1988); Canadian Drug Manufacturers' Association (1988/89); and Novopharm (1988). In some instances many examples are provided. In the course of this study other examples came to the authors attention.

18 Apotex or Novopharm on all of the remaining eight except the two strengths of acetaminophen compound with codeine 30 mg tab., where Horner was a competitor.

19 The ODB does not collect and capture data by prescriber. The only exception is data with respect to PC34. These forms contain the physicians' name and address. However, they are not available in machine readable form by physician. To do so it would require manual sorting of such forms. The cost, for this exercise, was considered too high.

20 Table 4-3 also shows that the average single source drug cost per claim rose between Jan-June 1986 and Jan-June 1987, but by 29.4 per cent.

21 It is difficult to rely on the data in Table 4-3 for longer term comparisons because of additions and changes in relative importance of individual drugs as well as the switching from single to multiple source categories.

22 In order to test this, the following variable was estimated: 1 - (Ontario price/Saskatchewan price). A signed rank test could not reject the null hypotheses that the central tendency was significantly different from zero.

23 Based on conversations with a number of industry and pharmacy representatives and also Ontario, Ministry of Health (1988b, pp. 4-5).

24 See, Ontario Ministry of Health (1988b, p. 5) and letters from Ortho Pharmaceuticals (Canada) Ltd., Organon Canada Ltd/Ltée., Nordic Laboratories Inc., Burroughs Wellcome Inc., G. D. Searle and Co. of Canada Ltd., McNeil Pharmaceuticals (Canada) Ltd., Eli Lilly Canada Inc., Smith Kline & French Canada Ltd., I.C.I. Pharma to the Ministry of Health as found in Canadian Wholesale Drug Association (1988).

25 This discussion applies particularly when a brand-name firm is the first firm to list another brand as interchangeable and these two are the only brands in the Formulary. In other cases, it appears the fighting brand is prepared to lower its price to meet the generic. See, for example, a Kenral letter to pharmacists reproduced in CDMA (1989, Appendix IV, n.p.).

26 Later in the paper the inquiry elaborates on the meaning of each principle. (ibid., p. 13).

Table 4-1

Volume of Drug Products[1] Considered by the Ontario Ministry of Health's Drug Submission Process for Inclusion in the Formulary: 1989

	January 1989[2]	July 1989[2]
Reviewed	78	54
Approved[5]	67	39[4]
Multiple source[3]	38	11
Single source	29	23
Rejected	11	15
Multiple source[3]	0	0
Single source	11	15

1 A drug product is defined as having a separate DIN.
2 For the January and July 1989 editions of the Formulary.
3 Includes non-interchangeable and interchangeable multiple source products.
4 Five were limited use.
5 In some cases there was a successful appeal.

Source Ministry of Health, Personnel Communication, September, 1989.

Table 4-2

Pricing and Other Information Presented in the Ontario Formulary, 1986 to the Present: Three Examples

Drug name	DIN	Brand name	Manufacturer	BAP ($)
		INTERCHANGEABLE DRUG PRODUCTS		
Diazepam 5mg Tab	013285	Valium	HLR	.0050
	013765	Vivol	HOR	
	272442	Novo-Dipam	NOP	
	280429	E-Pam	ICN	
	362158	Apo-Diazepam	APX	
	396230	Diazepam	DTC	
		NON-INTERCHANGEABLE PRODUCTS		
Griseofulvin (NOT INTERCHANGEABLE)				
125mg Tab	012246	Grisovin FP	GLA	.1383
	028266	Fulvincin U/F	SCH	.1304
		SINGLE SOURCE		
Mebendazole 100mg Tab	556734	Vermox	JAN	2.4142

Source Ontario, Ministry of Health (1989a, p.3 and 62).

Table 4-3

The Importance of Single and Multiple Source Formulary Drugs,[1] Ontario Drug Benefit Program, 1979-1988

Year/ period	Drug benefit formulary	Total number of drug products[2]	Percentage accounted for by multiple source drugs of all ODB			Dollar drug cost per claim		
			Number of drug products	Number of claims	Drug cost	Single	Multiple	All
1979								
Jan-June	10	1,878	60.6	69.5	55.3	5.66	3.07	3.96
July-Dec	11	1,904	60.3	68.6	53.7	6.18	3.29	4.20
1980								
Jan-June	12	1,964	60.1	67.9	52.3	6.48	3.35	4.36
July-Dec	13	1,994	60.7	66.6	49.3	7.18	3.50	4.73
1981								
Jan-June	14	2,037	60.2	65.5	47.9	7.59	3.68	5.03
July-Dec	15	2,038	58.9	64.1	45.5	8.40	3.93	5.54
1982								
Jan-June	16	2,061	52.2	61.7	39.3	8.78	3.81	5.99
July-Dec	17	2,119	52.0	62.0	42.1	10.14	4.50	6.64
1983								
Jan-June	18	2,121	51.2	62.7	44.9	10.19	4.96	6.91
July-Dec	19	2,177	49.9	61.5	41.8	11.01	4.98	7.29
1984								
Feb-June	20	2,227	49.9	61.2	35.8	11.56	4.09	6.99
July-Dec	20[3]	2,302	51.0	60.8	35.8	12.33	4.43	7.53
1985								
Jan-July	20[4]	2,309	51.0	60.8	34.8	13.14	4.54	7.91
July-Dec	20[4]	2,297	50.9	59.2	32.5	13.92	4.62	8.42
1986								
Jan-June	20[4]	2,289	51.2	58.3	31.6	13.88	4.59	8.46
July-Nov	20[4]	2,298	50.9	57.1	30.0	14.55	4.68	8.91
Dec	21	2,339	51.0	60.5	22.7	17.51	3.36	8.95
1987								
Jan-June	22	2,445	50.3	59.3	21.4	17.96	3.35	9.30
July-Dec	23	2,429	51.3	60.8	29.9	18.33	5.04	10.24
1988								
Jan-July	24	2,481	51.9	59.8	28.4	19.37	5.16	10.87
July-Dec	25	2,488	53.0	60.4	30.7	20.06	5.84	11.48

1 Between January 1979 and December 1981 non-interchangeable drugs are grouped with multiple source drugs; from January 1982 they are grouped with single source drugs.

2 A separate drug product is defined as one having a separate unique Drug Identification Number, or DIN. A separate DIN is given for each different dosage form and strength of a drug; and, for a given dosage form and for strength, a different DIN is used for each brand for each manufacturer.

3 Addendum

4 Revised addendum

Source Ontario, Ministry of Health, "Manufacturers Profile System, ODB Report 2 - Drug Cost Report, Summary of Market Activity", Tables 4.IV 5a to 5d, no date.

Table 4-4

The Ontario Formulary Price[1] of the First Interchangeable Brand Listed Compared to the Original Brand, Cardiovascular and Central Nervous System Drugs, 1989[2]

First interchangeable brand listed	Ratio of price of interchangeable brand to originator
Apo-Atenol 50 mg tab.	0.7865
Apo-Atenol 100 mg tab.	0.7877
Apo-Nadol 40 mg tab.	0.7878
Apo-Nadol 80 mg tab.	0.7508
Apo-Nadol 160 mg tab.	0.7880
Apo-Pindol 5 mg tab.	0.7284
Apo-Pindol 10 mg tab.	0.7280
Apo-Pindol 15 mg tab.	0.7280
Apo-Diltiaz 30 mg tab.	0.8185
Apo-Diltiaz 60 mg tab.	0.8183
Coradur-SR 20 mg LA tab.	1.0000
Rhodis 100 mg sup.	0.9974
Rhotrimine 75 mg cap.	1.0080
Triazolam 0.125 mg tab.	0.8755
Triazolam 0.25 mg tab.	0.8755
Triadapin 150 mg tab.	0.7121

1 Price is defined as the BAP.
2 January and July Formularies.

Source Ontario, Ministry of Health (1989a, 1989b, various pages).

Table 4-5

The Importance of Special Authorizations[1]
Under the Ontario Drug Benefit Program,
March 1986 to March 1989[2]

	Special authorizations as a percentage of all ODB	
	Claims	Dollars paid[3]
1986	2.4	4.8
1987	1.7	3.3
1988	2.4	4.2
1989	2.4	4.2

1 The table refers to drugs only, and hence excludes oxygens and allergens.
2 The ratios in the table refer to March of the given year.
3 Includes drug cost and fee.

Source Ontario Drug Benefit, "Formulary Utilization", computer print-outs for March 1986 to March 1989.

Table 4-6

The Importance of No-Substitution Claims for the Ontario Drug Benefit Program: 1981/82 - 1988/89[1]

Year	No-substitution claims	
	Number	Proportion of all claims
		(Per cent)
1981/82	42,318	0.2
1982/83	60,350	0.3
1983/84	105,373	0.4
1984/85	137,455	0.5
1985/86	221,968	0.7
1986/87	239,914	0.7
1987/88	443,898	1.3
1988/89	472,849	1.3

1 For fiscal year ending in March 31.

Source Ontario, Ministry of Health, "Managing by Results, Results Abstracts", various issues.

Table 4-7

The Importance of Various Factors in Accounting for the Changing Level of No-Substitution Claims, for the Top Dollar Volume Drugs,[1] Ontario Drug Benefit Program, March 1987 to 1989

	Dollar volume		Number of drugs in each category	
	1987	1989	1987	1989
	(Per cent)			
$ID/(ID + SS + NI)^2$	22.4	56.2	10	17
$SS/(ID + SS + NI)^2$	72.1	41.0	18	14
$NI/(ID + SS + NI)^2$	5.5	2.8	2	1
β^2	3.1	5.7	--	--
NS^2	0.7	3.2	--	--

1 The top dollar volume drugs, by dosage form and strength, accounting for 34.6 per cent of all ODB expenditure on drugs, including the dispensing fee, in 1987 and 34.5 per cent in 1989.

2 These are derived from equation 4.1. See text for legend. Note that there were very few no substitution claims for NI and SS which are omitted.

Source Ontario Drug Benefit, "Formulary Utilization", computer print-outs for March 1987 and March 1989.

Table 4-8

High Dollar Volume Interchangeable Drugs[1] for Which No-Substitution Claims Exceeded 4 Per Cent of ODB Dollar Volume Expenditure,[2] March 1987, 1989

Drug	Importance of no-substitution claims			
	1987		1989	
	Dollar volume	Claims volume	Dollar volume	Claims volume
	(Per cent)			
Hydrochlorothiazide and triamterene 25 mg and 50 mg. tab.	2.9	2.3	5.1	3.6
Psyllium mucilloid oral Pd. otc 340 mg Pk.	12.2	6.2	22.1	12.0
Cimetidine 300 mg tab.[3]	10.8	4.7	15.7	6.3
Ranitidine HCl 150 mg tab.	--	--	9.9	8.3
Diltiazem HCl 60 mg tab.	--	--	4.7	4.1
Nifedipine 10 mg tab.	--	--	8.5	6.3
Atenolol 50 mg tab.	--	--	6.2	5.5
Timolol maleate 0.5 % Oph. Sol.	--	--	8.6	6.9

1 The sample is the same as that used in Table 4-5.
2 In either March 1987 or March 1989.
3 In March 1989, this was no longer in the sample.

Source Ontario Drug Benefit, "Formulary Utilization", computer print-out for March 1987 and March 1989.

Table 4-9

The Importance of No-Substitution Claims, by Pharmacy[1], Ontario Drug Benefit, May-October, 1989

Percentage of all pharmacy claims that are no-substitution	Pharmacies		No-substitution claims		All claims	
	No	%	No	%	No	%
0	618	22.00	0	0.0	1,073,403	6.0
0.0001 - 0.499	397	14.00	5,997	2.0	2,336,399	13.0
0.500 - 0.999	379	13.00	22,094	7.0	2,934,509	16.0
1.000 - 1.499	427	15.00	42,620	13.0	3,450,182	19.0
1.500 - 1.999	301	10.00	43,139	13.0	2,485,752	14.0
2.000 - 2.999	371	13.00	74,511	23.0	3,023,671	17.0
3.000 - 3.999	163	6.00	43,261	13.0	1,261,316	7.0
4.000 - 5.999	151	5.00	50,388	16.0	1,058,485	6.0
6.000 - 7.999	37	1.00	20,794	6.0	304,230	2.0
8.000 - 9.999	14	0.50	8,129	3.0	91,281	0.5
10.000 - 13.999	11	0.40	7,025	2.0	60,289	0.3
14.000 - 17.999	1	0.03	1,577	0.5	11,216	0.1
18.000 and above	1	0.03	1,516	0.5	8,391	-
TOTAL	2,871	100.00	321,051	100.0	18,099,124	100.0

1 This is by each separate account used by the ODB for billing purposes. While the majority are pharmacies, also included are homes and prescribing/dispensing physicians.

Source Ontario, Ministry of Health, Ontario Drug Benefit, special tabulation, December 1989.

Table 4-10

Short and Long-Run Impact of BAP on the Ten Highest Dollar Volume[1] Single and Multiple Source Drug Prices in Ontario: 1986-1989

Drug, Strength and dosage form	Price[2] 1986	1987	1989
	($)	($)	($)
Single source in 1986[3]			
Ranitidine HCl 150 mg tab.	0.8232	0.9585	1.0308
Nifedipine 10 mg cap.	0.3830	0.4236	0.5086
Salbutamol 1nh-200 dose Pk.	8.8500	10.9450	11.7700
Diclofenac sodium 50 mg Ent. tab.	0.4754	0.5209	0.5988
Potassium chloride 8 mg Eq. LA tab.	0.0551	0.0616	0.0728
Digoxin 0.125 mg tab.	0.0528	0.0715	0.0776
Piroxicam 20 mg cap.	0.9823	1.2595	1.5741
Amiloride HCl and hydrochlorothiazide 50 mg and 50 mg tab.	0.2694	0.3021	0.3273
Diltiazem HCl 60 mg tab.	0.4257	0.5266	0.5848
Timolol maleate 0.5 % Oph. Sol.	2.4980	2.6268	2.8457
Multiple source in 1986[4]			
Acetaminophen compound with codeine 30 mg tab.	0.0976	0.0355	0.0375
Hydrochlorthiazide and triamterene 25 mg and 50 mg tab.	0.0612	0.0462	0.0532
Psyllium mucilloid, oral pd. 340 mg Pk.	6.4000	4.5000	4.7000
Naproxen 250 mg tab.	0.2211	0.1430	0.1430
Acetylsalicylic acid 650 mg Ent. tab.	0.0223	0.0226	0.0259
Cimetidine 300 mg tab.	0.0967	0.0891	0.0990
Acetaminophen compound with codeine 15 mg tab.	0.0662	0.0319	0.0349
Furosemide 40 mg tab.	0.0086	0.0081	0.0089
Metoprolol tartrate 50 mg tab.	0.1600	0.1152	0.1268
Glyburide 5 mg tab.	0.1089	0.1166	0.1705

1 Dollar volume refers to ODB for March, 1986. It includes dispensing fee as well.

2 The price of the drug for 1987 and 1989 consists of BAP plus 10 per cent for 1987 to 1989. For 1986, the definition is the MAC, with an allowance for wholesale costs, "unless data prove that over 50 % of a manufacture's sales of those drug products in Ontario are via direct channels", (Ontario, Ministry of Health, 1985a, p. VII). Prices refer to those prevailing in first half of the year.

3 By 1989, ranitidine HCl 150 mg tabs.; nifedipine 10 mg caps.; diltiazem HCl 60 mg tabs; and timolol maleate 0.5 % Oph. sol. were all classified as multiple source. In the table, the BAP plus 10 per cent refers to that brand which was single source in 1986 and 1987 -- Zantac, Adalat, Cardizem and Timoptic. Potassium chloride is non-interchangeable. However, since one brand, despite a much higher price, commands virtually all of the ODB market, this drug is treated as single source. The price for this brand is included in the table.

4 The price listed is for the lowest for that of the various interchangeable brands. In some instances, the number of interchangeable brands increased between 1986 and 1989.

Source Ontario Drug Benefit "Formulary Utilization", computer printouts for March, 1986, March, 1987 and Ontario, Ministry of Health (1989a, various pages).

Table 4-11

Average Changes in Ontario Drug Benefit Drug Prices on Ten High Dollar Volume Single and Multiple Source Drugs: 1986-1989

Sample of drugs	Mean	Standard deviation
	Ratio of 1987 to 1986 prices	
10 single source	1.1767	0.0965
10 multiple source	0.7618[2]	0.0724
	Ratio of 1989 to 1987 prices	
10 single source	1.1295	0.0624
10 multiple source	1.1265[2]	0.0400
	Ratio of 1989 to 1987 prices	
6 single source[1]	1.1375	0.0696
10 multiple source	1.1265[2]	0.4000

1 Excludes the four single source that became multiple source by 1989.

2 The means of the two samples are significantly different for the first panel at .01, but not for the second and third panel at .10.

Source Table 4-10.

Table 4-12

An Inter-Provincial Comparison of Formulary Prices for the Highest Dollar Volume[1], Ontario Drug Benefit Multiple Source Drugs: 1989

Drug, dosage form and strength	Ontario[2]	Saskatchewan[3]
Ranitidine HCl 150 mg tab.	0.7161	0.6716
Diltiazem HCl 60 mg tab.	0.4350	0.4829
Diltiazem HCl 30 mg tab.	0.2480	0.2753
Nifedipine 10 mg cap.	0.3192	0.2898
Glyburide 5 mg tab.	0.1550	0.1449
Triazolam 0.125 mg tab.	0.1188	n.a.
Atenolol 50 mg tab.	0.3890	
Acetaminophen compound with codeine 30 mg tab.	0.0341	0.0278
Hydrochlorothiazide and triamterene 25 mg and 50 mg tab.	0.0484	0.0378
Acetylsalicylic acid 650 Ent. tab.	0.0235	0.0221
Furosemide 40 mg tab.	0.0081	0.0075
Timolol maleate 0.5 % Oph. Sol.	1.9200	n.a.
Acetylsalicylic acid 325 Ent. tab.	0.0142	0.0173

1 Highest dollar volume includes both dispensing fee and drug cost.
2 For Ontario, the price used is the BAP as printed in the Formulary.
3 For Saskatchewan, the price used is the Standing Offer Contract price as printed in the Formulary.

Source Ontario, Ministry of Health (1989a, various pages).

Table 4-13

The Success of the First Interchangeable Brand in Capturing Market Share for High Volume Drugs[1] Made Interchange in January 1989 in Three Months

Drug	Market shares as of March 1989					
	First interchange brand		Originator			
			Sales at DAP		No-substitution sales	
	$[2]	Claims	$[2]	Claims	$[2]	Claims
	(Per cent)					
Dialtiazem HCl 60 mg tab.	89.0	89.5	6.3	6.4	4.7	4.1
Dialtiazem HCl 30 mg tab.	89.7	89.9	6.7	6.9	3.6	3.2
Triazolam 0.125 mg tab.	82.6	82.6	16.2	16.3	1.2	1.1
Atenolol 50 mg tab.	84.7	85.3	9.1	9.3	6.2	5.5

1 The sample was the high volume drugs selected for inclusion in Table 4-7, that became interchangeable in January 1989.
2 Dollar volume includes dispensing fee.

Source Ontario Drug Benefit, "Formulary Utilization", computer print-outs for March 1989.

FIGURE 4-1

DRUG SUBMISSION PROCESS

Ministry of Health
Ontario

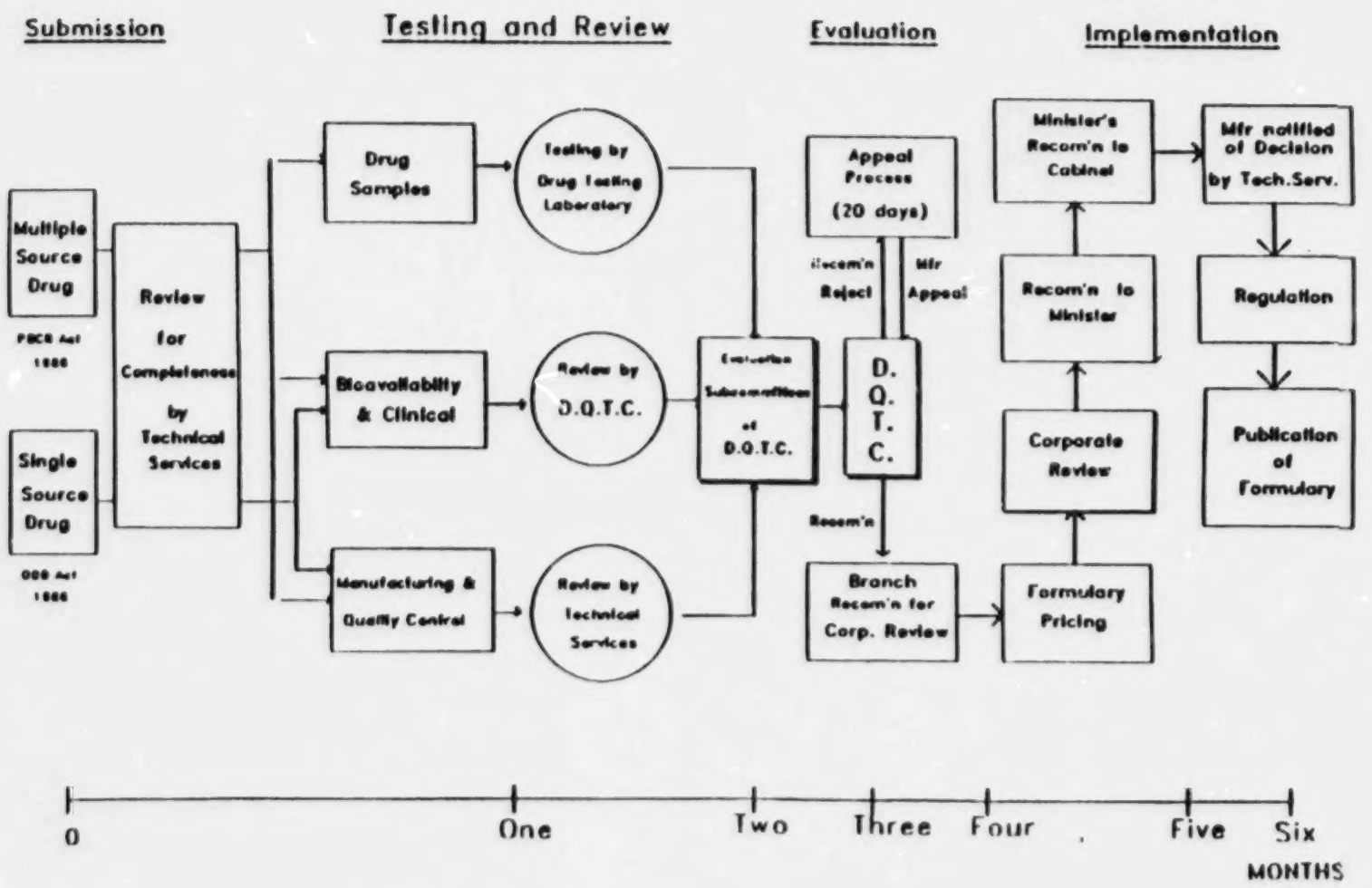


FIGURE 4-2

DRUG QUALITY AND THERAPEUTICS COMMITTEE

Terms of Reference

Revised in OC 137/87 January 22, 1987

1. To advise the Minister on the operation of a program to assist the people of Ontario to obtain prescribed pharmaceutical products of quality at reasonable cost.

2. To establish criteria to evaluate the quality and therapeutic value of drug products.

3. To recommend to the Minister which drug products have met the prescribed conditions to be eligible to be designated as interchangeable products or listed drug products for the purposes of the Ontario Drug Benefit Act, 1986 and the Prescription Drug Cost Regulation Act, 1986.

4. To evaluate pharmaceutical manufacturers and pharmaceutical products.

5. To provide advice on relevant drug, pharmaceutical and therapeutic questions solicited or requested by the Ministry of Health from time to time.

6. To review and assess information related to drug and pharmaceutical products prepared for the Committee and for the Minister by selected consultants from time to time as requested by the Minister.

7. To recommend for distribution to the public and the health professions, information relating to drugs, pharmaceutical products and therapeutic topics.

8. At the Minister's request to act as liaison between the Minister and professional, educational and other groups.

5 CONCLUSION

Expenditures under the Ontario Drug Benefit Programme have risen substantially in the past decade or so. Indeed, the rate of increase has not only been above inflation, but also the health care budget for Ontario. This increase in real and relative terms, respectively, combined with a concern that drugs were not always being used appropriately have led to calls for reform, both with respect to reduced expenditures and better drug usage.

In this paper we have carefully examined the ODB with respect to its history, rationale, and success in meeting its declared objectives. While the ODB has undoubtedly attained its stated objective of providing,

> ... as a drug benefit to specified groups of persons, including senior citizens and welfare recipients, designated prescription drugs with the intent of alleviating the financial burden of drug therapy

it nevertheless is the view of the paper that this is achieved at a cost in excess of the minimum necessary. Thus a number of suggestions are made to match, more closely, the program objective with the program outcome.

Some of the suggestions include:

- a patient/consumer copayment on the dispensing fee for the better off senior citizens. As a group, senior citizens account for 80 per cent of ODB expenditures.

- an information program to increase the quantity dispensed for maintenance drugs. At the present time average quantity is approximately sufficient for a month's course of treatment. Larger quantities can be safely dispensed at one time thus reducing cost.

- a recognition of the interdependence of the dispensing fee and drug cost by having the fee set competitively. Any margin that pharmacists obtained by buying drugs at prices below the ODB reimbursement level would, hopefully, result in lower fee levels.

- a number of reforms to the way drugs are selected, priced, prescribed and listed in the Formulary by the Drug Quality and Therapeutics Committee/Ministry of Health designed to lower costs for the same level of benefits.

The thrust of these recommendations is for a competitive market mechanism to set the dispensing fee and for a more assertive role of the DQTC/MOH in the area of drug cost.

The implementation of the proposed changes is not likely to be straightforward. Some will require legislation, while others will likely arouse considerable opposition. However, it is difficult to see how expenditures can be reduced without adversely affecting the economic interest of at least some groups.

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APPENDIX A

TERMS OF REFERENCE AND RECOMMENDATIONS OF INQUIRIES INTO THE ONTARIO DRUG MARKET

This appendix presents the Terms of Reference and Recommendations of several of the most important inquiries into the drug industry in Ontario over the past twenty years. All the material is taken from the reports of the inquiries themselves. The inquiries are arranged in chronological order.

THE REVIEW COMMITTEE ON PRESCRIPTION PRODUCT SUBSTITUTION (PORTER COMMITTEE)

Terms of Reference

On February 26, 1971, the Committee was directed by the then Minister of Health to report concerning the following matter:

> To consider the question of permitting pharmacists when dispensing a prescription to select, from the PARCOST Comparative Drug Index, an alternate product containing identical amounts of the identical active ingredient in an identical dosage form.

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The Committee's specific Terms of Reference were:

a) To study and analyze the various proposals made by the professional bodies on the above question.

b) To examine possible methods of implementing those proposals and the desirability of legislation.

c) To examine the legal implications of the proposals.

d) To examine the various forms of public safeguards, e.g. labelling prescriptions with the name of the drug, dose, manufacturer's name, etc.

e) To examine the relationship of the proposals to the PARCOST Program.

f) To report to the Minister of Health on the effectiveness of the various procedures that may be adopted.

RECOMMENDATIONS

Recommendation #1

Unless directed otherwise by the prescriber, a pharmacist when dispensing a prescription for a product listed in the PARCOST

Comparative Drug Index, may select and dispense a comparable pharmaceutical product* provided that the cost of such product to the consumer is equal to or lower than the lowest priced comparable pharmaceutical product listed in the PARCOST Comparative Drug Index.

* Comparable Pharmaceutical Product(s) - those products listed in the PARCOST Comparative Drug Index which contain identical amounts of the identical active ingredients in identical dosage forms.

Recommendation #2

We further recommend that the pharmacist be required to label all prescriptions with the name of the drug product as well as the strength and the manufacturer's identity.

ONTARIO DRUG BENEFIT FORMULARY PRICING COMMITTEE (BAILEY COMMITTEE)

Terms of Reference

On October 1977, the Committee was directed by the Minister of Health, "to advise on the possibility of improving the present system of establishing the prices listed in the Ontario Drug Benefit Formulary". (in the words of Bailey et al., 1978, p. 1).

The exact Terms of Reference of the Committee were outlined as follows:

a) To review the current policies and procedures used in establishing the package sizes and prices listed in the Ontario Drug Benefit Formulary/Parcost Comparative Drug Index.

b) To determine whether or not the existing system is appropriate in view of today's marketing practices, and to identify any problems that may exist.

c) To consider alternatives.

d) To make recommendations for improvements.

RECOMMENDATIONS

To improve the effectiveness of the Ontario Drug Benefit Program it is recommended:

9.1 That the Ontario Drug Benefit Formulary should disclose only the lowest price quoted on interchangeable products. All other products in each interchangeable group should be listed in alphabetical order. The government should not produce a price book that can adversely influence drug costs for the remaining 75 % of the prescription market.

9.2 That the prices of the other products in an interchangeable classification shall be considered to be the actual acquisition cost to the pharmacy.

9.3 That consideration should be given to using the phrase "invoice cost" rather than "actual acquisition cost" if this is more practical.

9.4 That Section 158 of the Health Disciplines Act should be revised if necessary to accommodate this change in the Parcost Comparative Drug Index/Drug Benefit Formulary.

9.5 That for those products whose volume is such that the average pharmacy purchases 1000 units per month, quotations in the Ontario Drug Benefit Formulary should be based on the cost per 1000.

9.6 That this volume could be established through a review of the claims submitted to the Ontario Drug Benefit. Where the total volume exceeds 450,000 units per month for a given product, it can be assumed that the average pharmacy is capable of purchasing 1000 units of such products monthly, since ODB claims only account for 25 % of Ontario prescription expenditures.

9.7 That the effect of the above changes should be assessed after a six month period and adjustments made accordingly. If it is impractical for the average pharmacy to purchase these high volume products in 1000's, adjustment could be made to either 500's or other smaller packages. Similarly, if additional products reach this utilization level, they should be added to the list of large package sizes.

9.8 That the Ontario Drug Benefit Formulary should specify the package size used in determining the product prices listed.

Additional Proposals

Although the following considerations may be beyond our Terms of Reference, we feel obliged to make these comments because the delegates from both the Ontario Pharmacists Association and the Drug Trading Company, in their presentations, insisted that any change in package sizes listed in the Formulary must not be implemented until consideration is given to other aspects of the program such as the Ontario Drug Benefit dispensing fee and the overall remuneration of the pharmacist.

We recognize that this is a valid point and we have therefore given due consideration to the various components of the

pharmacists' reimbursement and alternative approaches to the provision of an efficient program which will not adversely affect the prescription drug market in general.

With the above factors in mind, we recommend:

10.1 That future negotiations with the pharmacists should acknowledge that a reasonable extra margin should be allowed to the retail merchant who buys in quantity and at less frequent intervals, since the normal economies of scale should prevail. We feel however, that such extra profit should not exceed the normal 10 to 20 % which might be expected on quantity purchases of any other type of commodity.

10.2 That manufacturers should be cautioned about quoting fictitious prices for Formulary listings of their products. To put teeth into this warning, the Ministry should question the corporate responsibility of any manufacturer that fails to meet this criterion and if necessary, delist products of any manufacturer engaged in this practice.

10.3 That provision should be made to enable the cash paying public to make a rational choice of pharmacies when having prescriptions filled. Pharmacies should be allowed to declare their dispensing fee through both the advertising

media and by means of discreet plaques or cards at the pharmacy entrance or in the dispensing area.

10.4 That the government should encourage fair pricing policies by enabling the public to have a standard by which to compare the providers of prescriptions. This could be done by periodically making the public aware of the price paid by government for Ontario Drug Benefit prescriptions. This could be done through the news media and the public should be made aware of three factors:

a) The current fee paid by government for prescriptions under the Ontario Drug Benefit.

b) The fact that in Ontario less costly products are frequently available among the high dollar volume drugs and -

c) The fact that these interchangeable products are comparable in quality to the more expensive products frequently prescribed.

10.5 That the plastic eligibility cards currently issued to all Ontario citizens 65 over, should be used more effectively as they would be in any other business. To minimize the danger that the taxpayer may be paying

for prescriptions which were never filled, the identification cards should be presented and used in the appropriate machine in every pharmacy each time a prescription is filled. The recipient of the prescription should sign a receipt which could be forwarded to the Ministry along with Drug Benefit claims for reimbursement. We believe that the public would thus share the responsibility for these claims and that a more accurate audit trail could be established through this mechanism.

10.6 That the common practice of dispensing only 30 days medication to senior citizens should be modified in view of the fact that most of these individuals are on long term therapy and many find it inconvenient to visit the pharmacy monthly. Dispensing of more rational quantities at one time should result in substantial economies to the pharmacy. These savings could be passed on to the taxpayer, and at the same time the hardship of repeated visits to the pharmacy by the ODB recipients could be alleviated.

10.7 That a token portion (co-payment) of the prescription be paid by the Ontario Drug Benefit recipient to discourage over-utilization of drugs and to account for part of the dispensing fee. Even a 50 ¢ co-

payment would result in a sizeable saving to the taxpayer.

10.8 That consideration should be given to a revision of the legislation requiring the use of child-proof containers on every prescription in Ontario. Prescriptions for individuals 65 and over should have more convenient closures unless otherwise specified. This would make it easier for senior citizens to obtain their medication and it would reduce the cost of prescriptions in this province. In the opinion of the Committee the risk of child poisoning in the homes of the elderly is outweighed by the danger of making vital medication inaccessible to those most in need.

THE COMMISSION ON THE PRICING OF MULTIPLE-SOURCE DRUG PRODUCTS IN ONTARIO (GORDON COMMISSION)

Terms of Reference

In March 1984, the Commission was given the following Terms of Reference:

1) On what bases and by what means should the prices for multiple-source products be determined for the purposes of listing in the PARCOST C.D.I. and the

Ontario Drug Benefit Formulary in their present forms or as they may be amended?

2) What adjustment, if any, apart from normal periodic negotiated fee increases, should be made in the dispensing fee provided for in relation to the PARCOST C.D.I. and the Ontario Drug Benefit Formulary as a consequence of implementing the answer to Question 1?

3) Should there be any changes in the provision regarding product selection under Section 155 of the Health Disciplines Act?

RECOMMENDATIONS

Pricing of Multiple-Source Drug Products

1) The Ministry of Health should continue to publish the PARCOST C.D.I./Drug Benefit Formulary in its present form, listing all drug products eligible for reimbursement under Drug Benefit and the Maximum Allowable Cost for each, and all drug products certified as interchangeable by the Drug Quality and Therapeutics Committee and their relative prices.

2) Prices should continue to be listed for all drug products in an interchangeable group, and, for each manufacturer's product, should be no more than 20 % higher that the best volume price available from the manufacturer during the formulary period for the package size listed. This method of determining the price for listing could also be applied to single-source products. It is intended to maintain the concept of purchasing advantage with its consequent motivation for pharmacies to purchase efficiently and for manufacturers to price their products competitively. The exact percentage included in this definition (20 %) is, of course, open to negotiation by the Ministry of Health and the Ontario Pharmacists' Association if they choose to change the amount of purchasing advantage available to pharmacies.

3) The Ministry of Health make it a condition of listing for any particular drug product that the manufacturer of that product sign an agreement with the Ministry of Health stating that the prices submitted are accurate and will be adhered to. The penalties which might be considered for any manufacturer not honouring such an agreement could range from ceasing reimbursement for that manufacturer's product to temporarily restricting

reimbursement price increases for that manufacturer's product.

4) The Ministry of Health should continue to base the prices listed for high-volume drug products on package sizes of 1000. To improve the effectiveness of this policy, the Ministry should examine whether the definition of high-volume (450,000/month) needs to be revised, and should keep this group of high-volume drug products current by making additions and deletions regularly. As well, pharmacies and manufacturers should be given a reasonable amount of notice of changes in the drug products defined as high-volume.

5) The Ministry of Health should revise the prices listed in the Index/Formulary quarterly so that they reflect changing market conditions more quickly. The Index/Formulary should still be published twice yearly, and the Ministry should, therefore, investigate methods of distributing price information which guarantee both ease of revision and ease of use. One method which might be considered, for example, is the use of microfiches such as those employed by Drug Trading.

Dispensing Fee

1) The Ministry of Health and the Ontario Pharmacists' Association continue to negotiate a single dispensing fee, and use objective information on dispensary cost elements to assist in determining the amount of the fee. The negotiated dispensing fee should continue to be applicable to all Drug Benefit prescriptions with the exception of over-the-counter products, and to all PARCOST pharmacies.

2) The Ministry of Health should work with the Ontario Pharmacists' Association and other organisations representing pharmacy to define precisely the cost elements of which the negotiated dispensing fee is composed, and should collect sufficient information from representative Ontario pharmacies to identify the nature of those costs (fixed or variable with dispensing volume), the factors influencing these costs, and trends in the level of these costs across pharmacies and over time (Appendix F). The purpose of this recommendation is threefold:

   i) to emphasise the specific purpose of the fee, and to separate it clearly from drug cost reimbursement;

ii) to provide sufficient information to service providers and payers to enable them to conduct fee negotiations using a mutually established body of data as is done in the United Kingdom;

iii) to provide the Ministry of Health with information about differences in pharmacy operating costs with respect to location, size, and proportion of third-party dispensary business; this can be used as the basis for institution subsidies to some or all pharmacies for specific reasons, such as supporting certain classes of pharmacies and ensuring strong service delivery in rural areas.

3) The dispensing fee not be adjusted when the basis for determining prices is changed. Such fee adjustments only serve to erode the usefulness of the cost plus fee concept. The most recent adjustment of $0.35 should not be considered as being caused by a change in listed prices, but should be included in the base for fee negotiations. This base fee of $5.00 appears to be equitable when compared to negotiated fees in other provinces, and the Commission believes that

future fee negotiations will be greatly assisted by the collection of more precise information on dispensary costs.

Section 155

1) Section 155 of the Health Disciplines Act be amended to allow pharmacies to charge a usual and customary fee when product substituting or product selecting. The Commission believes this amendment will remove the strongest barrier to the increased use of interchangeable products in the present system.

2) Section 155 be amended to delete the phrase "at a price in excess of the cost of the lowest priced interchangeable pharmaceutical product in his inventory" as it applies to product substitution. Pharmacies should continue to be restricted to the lowest price in inventory on product selected prescriptions. These amendments should moderate any enforcement problems caused by the lowest in inventory rule, and act to preserve the economic advantage enjoyed by consumers when selection or substitution is practised, particularly if consumer awareness of dispensing fees is increased as proposed in the secondary recommendations.

3) The Ministry of Health and pharmacy organisations should set a target level of substitution to be achieved, and the Ministry of Health and the Ontario College of Pharmacists should monitor the level of product substitution achieved within a reasonable time following this amendment. If the response on the part of pharmacists is not satisfactory, the Ministry should take stronger measures to increase substitution, such as instituting mandatory price substitution in the non-Drug Benefit market.

SECONDARY RECOMMENDATIONS

Information

1) The Ministry of Health should seek the co-operation of pharmacists and manufacturers in carrying out a continuous and consultative process of collecting information on activities in the retail prescription market. Information should be gathered in such areas as prescription prices in other provinces, dispensary costs, wholesale drug prices, trends in the practice of product substitution and generic prescribing, price trends of single-source products, prices paid by hospital dispensaries in purchasing drug products, and the effectiveness of activities in other

jurisdictions, such as the capitation trial in British Columbia. The Ministry of Health should consider establishing an advisory committee representing the four principal parties which would have the responsibility for determining the scope and methods used for this monitoring activity. The four principal parties, and other organizations representing pharmacy and manufacturers, should be fully informed of the types of information being collected, and the information collected should be available to all parties.

2) The Ministry of Health should contract with an independent market research firm to conduct a continuous consumer panel on health services in Ontario. Preceded by a pilot study, the panel would be composed of a representative group of people, and would yield quantitative information as to the levels of consumption of and interrelationships among hospital, nursing home, physician, and pharmaceutical services. This information could then be used to analyse patterns of consumption, changes in those patterns, and the causes of such changes.

3) The Ministry of health should amend the regulations under the Pharmacy Part of the Health Disciplines Act

either to allow or to make mandatory the posting of dispensing fee information and the inclusion on prescription labels of a breakdown of the total prescription price into its two components of drug cost and dispensing fee. The former, more permissive, approach to providing consumers with this information is preferred; however, it can only work with the support of the Ontario College of Pharmacists and other organisations representing pharmacies. If such support is not forthcoming, the mandatory approach should be used.

4) Finally, the Ministry of Health should consider restructuring Ontario Drug Benefit in such a way as to encourage beneficiaries to act on its behalf as cost control agents. This could be done by instituting either a co-payment system whereby the beneficiary pays the pharmacist either a fixed dollar or fixed percentage amount each time a prescription is filled; or a co-insurance system whereby the beneficiary is responsible for the purchase of all prescriptions up to a deductible limit and eligible for a fixed percentage reimbursement on all prescriptions thereafter; or by a system under which beneficiaries pay for their prescriptions and receive full reimbursement directly from the Ministry of Health.

Any one of these approaches would provide a mechanism for increasing the cost consciousness of consumers, and, therefore, encouraging some competition at the retail level.

Dispensing Fee

1) In conjunction with fee posting, the Ministry of Health co-operate with the Ontario College of Pharmacists and all organisations representing pharmacies to promote to the public the professional nature of the services provided by pharmacy. Consumer education in this area could include such items as the professional health-care advice available from pharmacists, and their extensive knowledge of appropriate drug therapy.

2) The Ministry of Health, because of technology improvements, now has the ability to move to a full payment system. By doing so, it could do much to remove an aspect of Drug Benefit which appears to cause unnecessary friction between it and pharmacy.

Reimbursement Cost Control

1) The Ministry of Health use, whenever possible, its dominant position in the Ontario retail prescription market to influence drug costs at either the retail level of the manufacturers' level or both. As a major buyer of pharmacy services and pharmaceutical products, and as the trustee of public funds, the Ministry has the ability and the responsibility to take action, whether through a standing offer contract system or through extensive monitoring of wholesalers' and manufacturer's price lists in Ontario and elsewhere and informal negotiation with manufacturers and pharmacists to ensure reimbursement prices are realistic.

2) The Ministry of Health should engage in more frequent dialogue with manufacturers, both generic and patent-holding, in order to improve its working relationship with them, and to increase opportunities for resolving concerns and sharing information about pricing and marketing practices, and about the impact of provincial programmes on the manufacturers.

With respect to activities aimed at exercising a more indirect form of control over reimbursement costs, the Commission recommends that:

1) The Ministry of Health work in co-operation with pharmacy and physician representative bodies to explore and implement procedures for reducing waste of prescription drugs by encouraging more rational prescribing and dispensing practices, such as the use of drug utilisation review committees, and the use of trial prescriptions; as well, as a means of moderating the need for health care services overall, these parties should consider conducting public education programmes promoting healthy lifestyles by educating the public about the relationship of lifestyle to health.

2) The Ministry of Health and the Ontario Pharmacists' Association should agree to delete Paragraph 5 of the Participation Agreement and return to the practice of "dispense as written" for Ontario Drug Benefit recipients. In the Commission's view, this subsidy to pharmacy does not yield benefits commensurate with its costs; rather, if the Ministry and the Ontario Pharmacists' Association agree that some form of subsidy can be justified, that subsidy should be

derived from a quantitatively sound body of information, and should reflect some clearly defined policy goal.

3) **The Ministry of Health encourage the Ontario Medical Association to educate its members about the benefits of generic prescribing and the use of lower-cost drug products from generic manufacturers.** To date, the patent-holding manufacturers have been the most active group in educating physicians about new drug therapies. The Commission believes that physicians can perform a key role in controlling drug costs and, therefore, total health care costs. The Commission also believes that physicians should do so in the interests of ensuring that the level of funding of prescription services does not increase to such an extent that funding for other health services is harmed. The O.M.A., through its educational activities, is the appropriate body to provide physicians with the information and guidelines necessary for them to participate in cost control activities.

THE INQUIRY INTO THE ACQUISITION, DISTRIBUTION, DISPENSING AND PRESCRIBING OF PHARMACEUTICAL MEDICATIONS (LOWY COMMISSION)

Terms of Reference

In March 1988, the Ministry of Health gave the Commission the following Terms of Reference:

> The Committee shall undertake an inquiry into all aspects of the government's role and influence in the prescription drug marketplace. In doing so, the Committee will examine issues with respect to acquisition, distribution, dispensing and prescribing in government-funded drug programs.
>
> The Committee will develop options and recommendations for the continuance, modification or restructuring of government-funded drug programs.

In conducting the inquiry, the Committee may specifically examine the following:

a) The current drug programs operated by the government; their past, present and future trends in relation to government's objectives.

b) The cost effectiveness of the acquisition, distribution and financing mechanisms employed by the government.

c) The most effective ways to ensure quality of care and quality assurance of drugs under ODB.

d) The impact of utilisation of drugs on the health status of eligible recipients.

e) The current criteria for eligibility for the government sponsored programs.

f) The most effective ways to integrate education, manpower, research and development and other relevant factors into an overall drugs and therapeutics program.

FINAL REPORT

CITIZEN BEHAVIOURS TO ALLEVIATE MINOR OR NON ACUTE SYMPTOMS /MALADIES

Exploring the feasibility of producing consumer education on non-drug alternatives.

Prepared for the Project Advisory Committee by:
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October, 1989.

EXECUTIVE SUMMARY

This project was designed to explore the feasibility of producing a government supported guide to behaviours which do not involve the health care system in the personal response to common, yet occasional, non-acute symptoms or maladies. It developed out of a concern that consumers both use physician services and take a variety of prescription and non-prescription medications, when safer, equally (if not more) efficacious, and less expensive drug-free alternatives might exist. This project is consistent with the aims and philosophies of the Pharmaceutical Inquiry as it was an attempt to explore one way of encouraging safe, appropriate, and cost-effective drug use. It is also consistent with current trends which promote increased consumer participation in matters of health. This project recognizes the importance of patients/consumers as major players in effective drug utilization. It also explores one mechanism for increasing consumer autonomy and opportunities for making informed decisions.

This project was carried out by a research assistant in close consultation with an advisory committee. This committee, established in consultation with the Executive Director of the Pharmaceutical Inquiry, consisted of a multidisciplinary team of health professionals. The advisory committee helped set directions for the project, and reviewed all written material prior to its submission.

In order to gain a comprehensive understanding of the principles of self-care utilization, an initial literature review was done. This review looked at pertinent literature on self-care, patient utilization of the formal and alternative health care systems, the effects of specific educational interventions on patient utilization, common reasons for patient-initiated medical visits, and physician evaluations of self-care initiatives. The information gathered from this review was then used in the development of a list of 11 common ailments amenable to drug-free self-care interventions. It was also used for the development of interview questionnaires for subsequent interviews with physicians and pharmacists.

The initial list of common ailments consisted of upper respiratory symptoms/colds, constipation, diarrhea, heartburn/indigestion, minor dermatological problems, allergies, insomnia, fatigue, stress, headache/neck pain, and backache. Based on insights gained from the interview process, allergies and fatigue were later removed from the list. The ailments on this list were initially suggested by the practitioners on the advisory committee and supported by the literature. They were also confirmed by physicians and pharmacists as frequent causes for both physician visits and medication-taking behaviour.

A convenience sample of sixteen physicians and sixteen pharmacists was interviewed. A slightly different interview questionnaire was used for each type of professional as physicians and pharmacists have different terms of reference. In order to gain a feel for the differences in urban versus rural, and northern versus southern areas of the province, interviews took place in a number of different locations throughout Ontario. Approximately half the interviews were carried out in person, while the other half (which primarily consisted of practitioners in rural or northern locations) took place over the telephone. There did not appear to be any differences in the richness of response between the two interview media.

Results of the interview process indicate that physician and pharmacist education is of primary importance if a wide range of drug-free self-care interventions is to be supported. At this time, the majority of practitioners are comfortable only with the most basic lifestyle information. A lack of knowledge about alternatives and a lack of empirical data were frequently cited as reasons for not promoting alternative drug-free measures to patients.

Although practitioners would be supportive of education about drug-free alternatives (as long as the suggested alternatives remain within the comfort level of practitioners), most did not see this as the priority for educational efforts. There was a general consensus that there is a great deal of inappropriate medication use in the community. As a result, a high percentage of physicians and pharmacists stated that educational efforts should not focus solely on drug-free alternatives. Rather, they felt that education should be aimed at helping people make effective use of both drugs and health care resources. According to practitioners, this should not preclude the use of medication but instead, include drug-free alternative when appropriate.

There was unanimous agreement that education is a basic prerequisite to any real change in the system. A wide range of educational strategies, which ranged from the use of computers, to the development of pamphlets were suggested. Many practitioners identified T.V. and radio as prime educational media.

A number of physician and pharmacists felt that education must be supplemented by political interventions if a real change in the system is to be felt. Here suggestions included measures such as changes in physician payment mechanisms, and changes to the OHIP fee schedule. A number of pharmacists also identified a need for changes in drug plan reimbursement .

Based on the insights gained from both the literature review, and the physician and pharmacist interviews, two types of recommendations have emerged. Neither of these is mutually exclusive - rather each should be seen synergistically, building upon and complementing the other.

RECOMMENDED STRATEGIES involve:

1. THE DEVELOPMENT OF STRATEGIES FOR EDUCATING CONSUMERS ABOUT EFFECTIVE DRUG USE.

2. DESIGNING CONSUMER EDUCATION ON DRUG-FREE SELF-CARE BEHAVIOURS.

3. EXPLORING INNOVATIVE APPROACHES TO EDUCATIONAL STRATEGIES. These include:
   T.V. and Radio
   Pamphlets and written Materials
   Computers and Videos

4. THE ESTABLISHMENT OF AN ADVISORY GROUP ON DRUG-FREE ALTERNATIVES.

RECOMMENDED BEGINNING STEPS involve:

1. EDUCATING PHYSICIANS AND PHARMACISTS ABOUT DRUG-FREE ALTERNATIVES.

2. DECIDING ON APPROPRIATE TARGET GROUPS.

Because education is a long-term strategy, and due to the variety of strategies and diverse groups to whom education is to be directed, a final OVERALL RECOMMENDATION is included. This entails

LONG-TERM GOVERNMENT SUPPORT FOR EDUCATION ON APPROPRIATE DRUG USE.

INTRODUCTION / RATIONALE FOR THE PROJECT

The Pharmaceutical Inquiry represents for providers, employing agencies, drug manufacturers, distributors, and consumers an opportunity to influence public policy for a safe and cost-effective prescription drug system in Ontario. At its public hearings two major areas of inquiry were consistently explored.

1. What can government do to assist the provider and public groups in their efforts to promote safe, ethical and cost-effective drug use?

2. Given the sensitive nature of many of the issues which touch on the rights of professionals, manufacturers and individuals, the Inquiry wanted a sense of the political support for recommendations that would improve the cost-effectiveness and public protection in the system, yet may be seen to impinge on these rights.

The Pharmaceutical Inquiry recognizes patients/consumers as major players in effective drug utilization. While we know that information alone does not change health behaviour, there is a growing acknowledgement that information about the system itself - risks and benefits, and potential usefulness for illness intervention, as well as information on alternative options, may begin to change the consumption of health care services by Ontarians (Ministry of Health, 1989).

The past several years have seen an increase towards consumer participation in matters of health. In part this has been consumer driven; the result of the growing consumer and self-care movements (Havighurst, 1987). Government has also begun to play an increasing role in promoting the consumer as a partner in health care. On a broad scale, the 1986 "Framework for Health Promotion" (Epp, 1986) views self-care as important to promoting and maintaining health.

On a provincial level, the 1987 report "Toward a Shared Direction for Health in Ontario (Ontario Health Review Panel) recommended "increasing individual autonomy in order to develop a more balanced partnership between the individual and the health care provider." As such, an individual's right to ask questions, to seek alternatives to a recommended treatment, to participate actively in decision-making and to judge the results of health care services should be supported. Recently, in prefacing "Deciding the Future of Our Health Care" the Minister of Health stated that " we must all take full advantage of opportunities to be responsible for our own health and remain independent of the health care system as much as possible"(Caplan, 1989). Five ways that consumers can take advantage of opportunities

to be personally responsible for their health are acknowledged in Future Directions to include:

- making healthy choices in lifestyle
- preventing disease
- being informed about treatments
- being aware of costs to the system
- using health care services wisely

The purpose of this project was to explore the feasibility of producing a government supported guide to behaviours which do not involve the health care system in the personal response to common, yet occasional, non-acute symptoms or maladies. If the final recommendations are ultimately implemented, this project will be an important step in directly encouraging the wise use of health care resources, while at the same time influencing costs to the system. Such an initiative could counteract the tremendous influence of drug manufacturers on physicians and advertisers on the general public by providing education about a variety of alternatives to many of the common and over-the-counter drugs. Because it explores ways in which self-care can become a viable partner to the more formalized system, this project can be seen as one more contribution to setting the stage for greater consumer participation and autonomy in matters of health.

REVIEW OF LITERATURE

In order to gain a comprehensive understanding of the principles of self-care and health care utilization, an initial literature review was done. Pertinent literature on self-care, patient utilization of the formal and alternative health care systems, and the effects of specific health education interventions on patient utilization was investigated. In preparation for physician and pharmacist interviews and the development of a prototype, the review also looked at some of the most frequent reasons for patient initiated medical visits and physician evaluations of self-care initiatives. Because there is very little Canadian literature in these areas, much of the review focusses on U.S. data; to increase applicability to the Canadian context however, an attempt has also been made to include literature from countries such as Denmark and the U.K. which operate within a system more similar to our own.

Definition of Self-Care

Self care, the "self-initiated and self-controlled application of knowledge necessary for the promotion of health, reduction of undesired risk, self diagnosis and treatment of disease and, where appropriate, effective and self-protected use of professional health and medical resources" (Fletcher, 1985 in Perrault and Malo, 1987) forms the basis of any discussion on consumer responsibility and participation in matters of health. It is particularly appropriate to a discussion on encouraging the wise use of health care services, for the principles of self-care encourage the individual to assess his or her symptoms and to make a decision to act (or not act) according to this assessment. The Danish author, Kathryn Dean, who has done a great deal of work in this area defines self-care as "the range of individual behaviour involved in symptom recognition and evaluation, and in decisions regarding symptom responses, including decisions to do nothing about symptoms, to treat the symptom by self-determined actions or to seek advice regarding treatment" (Dean, 1981). Because this definition does not preclude the use of medical care, but rather sees it as one of a number of self-care options, it is particularly relevant when looking at ways to encourage efficient use of system. As such, Dean's definition will be used as the operational definition of self-care throughout this report. Since a complete review of the history, various philosophies and different interpretations of self-care is beyond the scope of this report, the major focus will be limited to self-care behaviour in response to illness.

In their comprehensive review of the self-care literature, Perrault and Malo identify epidemiological, social, economic and political factors in the current rise of interest in self-care. Within these factors, inadequacies of the health care system, which at times render it either impotent or even harmful, the overbureaucratization and impersonality of the health care system, which often create consumer dissatisfaction, and the high cost of the health care system in most industrialized countries make increased consumer responsibility/participation in health an attractive option (Levin and Idler, 1981 in Perrault and Malo, 1987, Russell and Forman, 1985).

Self-Care Behaviours

A number of specific actions can be described as self-care behaviours. As suggested by Dean and others, the major determinant of a self-care behaviour is the evaluation and consequent action which occurs as a result of the awareness of an alteration in a person's physical state (Dean, 1986, Williamson and Danaher, 1978 in Perrault and Malo, 1987). Actual self-care activities therefore, can include self-treatment with "home remedies", self-treatment with non-prescription (or old prescription) medications, consultation with lay resources (friends, relatives, colleagues), consultation with professional resources (including, both traditional and alternative practitioners), restricting activity while the problem persists, or waiting, watching, and/or "doing nothing" (Dean, 1981, Dean et. al., 1983, Segall and Goldstein 1989, Verbrugge and Ascione, 1987). It is not what the person actually does that defines self-care behaviours; rather, self-care derives from the actions of evaluating and making decisions based on a symptom or set of symptoms.

Consulting an Alternate Practitioner

There are few studies which specifically compare users and rates of utilization of alternative therapies with users of more traditional resources. A British study by Furnham and Smith (1988) used one group of patients visiting a GP and another visiting a homeopath to look at the different health and illness beliefs of patients choosing traditional versus alternative medicine. They found that while the two groups did not differ in their beliefs about illness susceptibility or preventive measures, the homeopathic group was much more critical of and skeptical about the efficacy of traditional medicine. Those visiting the homeopath also had a stronger belief that their health could be improved, in addition to a higher psychiatric morbidity. Although the patients visiting the homeopath were on the whole more ill than those seeing the GP, the authors feel that this may be because

these patients had already tried traditional interventions without success. The authors therefore suggest that people who choose alternative medicine may do so from disenchantment with and bad experiences of, traditional medical practitioners, rather than the belief that traditional medicine is itself ineffective. Another study by Demers et al (1980, cited in Perrault and Malo, 1987) looked briefly at the frequency of utilization of alternative therapies. Of the 107 members of a health insurance plan questioned, 90% had visited an alternate practitioner in the past year. The finding that persons suffering from chronic ailments had consulted such practitioners significantly more often than others seems to support the conclusions of Furnham and Smith; one can conjecture that chronic sufferers have not found what they needed from traditional care. However, a study done by Donnelly et al. (1987) of asthmatic and non-asthmatic families found more families satisfied with orthodox than alternative medicine. They also found that 45% of the asthmatic and 47% of the non-asthmatic families had consulted an alternative practitioner at some time. The most popular form of alternative medicine in this study was chiropractic, followed by homeopathy/naturopathy, acupuncture, and herbal medicine.

It does not appear, from these studies, that the users of alternative forms of treatment are an isolated group with a particular philosophical orientation. Rather, it seems that treatment needs and options are evaluated in the context of symptoms. If this is the case, then helping consumers to identify and evaluate options beyond traditional care could affect the numbers who consult alternative practitioners or try alternative treatments.

Consulting the Physician and Medication-Taking Behaviours

The criticism has often been raised that encouraging self-care could mean a delay in bringing potentially serious problems to medical attention, thus putting the patient at risk. In order to address this concern it is necessary to look at self-care as it relates to both physician utilization and medication-taking behaviour.

Despite the perception that people make many unnecessary visits to the physician for minor, self-limiting problems, research has shown that the physician is generally NOT a person's first line of defense (Perrault and Malo, 1987, Raymond, 1988). One British study indicates that although 75% of people experience at least one symptom every two weeks, few seek immediate help. It is estimated that two-thirds of illnesses are not treated medically, and among those who do consult a physician, 90% have first obtained

advice or an alternate form of treatment, while 50% have first taken a non-prescription medication (Russell and Forman, 1985 in Perrault and Malo, 1987). A review in England and the United States (Tripp-Reimer, 1986, in Perrault and Malo, 1987) estimates that 76% of illnesses are treated by some type of self-care. Even the data on the perceived "high users of physician services" - mothers and adult women - illustrate the use of self-care as a primary intervention for many symptoms. A Scottish study by Campion and Gabriel (1985) found that despite the occurrence of one new symptom per week in children under four, the frequency of medical consultation is only four per year, or one consultation for every 12 new symptoms. Another British study looking at consultation rates of women aged 20 to 44 found that only 3% of symptomatic episodes are treated by a physician; a ratio of one consultation for every 37 episodes of illness (Banks et al, 1975). Thus self-care is a fact of life for much of the population.

The use of prescription and non-prescription drugs generally mirrors the consultation/self-care data. Although Kessel and Shepherd and Jeffreys et al. (in Dean, 1981) found self-medication used as a supplement, rather than a substitute for medical consultation, others have found a stronger inverse relationship between the two. A number of researchers have found that self-medication with non-prescription drugs decreases both the likelihood of consulting a physician and the use of prescription drugs. Perrault and Malo describe one study of familial self-care behaviours using a health diary; for symptoms experienced by adults in the family, only 6.8% received medical attention while 90% were treated with a household remedy or non-prescription medication (Tripp-Reimer, 1986 in Perrault and Malo, 1987). In a study of users of non-prescribed medicines, Bush et al. (1976) found that non-prescribed medications often substitute for prescribed medicines, ill users of non-prescribed medicine are less likely to use prescription medications or to have visited a physician than non-users, rates of non-prescribed medicine use are lower for those who visited a physician, and use of prescribed and non-prescribed medications for the same purpose is negligible. Dunnell and Cartwright (reported in Dean, 1981) and Bush and Rabin (1976) also found lower rates of physician consultation among people who had used only non-prescription medications.

Determinants of Consultation and/or Self-Care

Although evidence on the correlates of self-care behaviour is at times contradictory, a number of factors do appear to affect a person's response to illness. These must be considered in the planning and targetting of educational strategies for the maximum impact to be accrued.

Some studies have suggested that cultural differences play an important role in both perception and action in response to illness (Russell and Forman, 1985, Kohn and White, 1976, quoted in Perrault and Malo, 1987). Other possible influences to the decision of whether or not to consult a physician have been attributed to factors such as perceived severity and perceived health status, the presence of chronic or acute symptoms, psychological distress, belief in internal causes for illness, and understanding of and attitudes towards medical care (Banks and Keller, 1971, Banks et al., 1975, Campion and Gabriel, 1985, Dean et al., 1983, Segall and Goldstein, 1989). Particularly relevant to this discussion is a Canadian study by Segall and Goldstein (1989) looking at correlates of self-provided health care behaviour. This study used a randomly selected cross-sectional sample of 524 residents of Winnipeg, Manitoba. The data suggest that selected social characteristics and skeptical attitudes towards doctors are potentially important correlates of self care.

Consistent relationships have been found involving sex differences in illness behaviour. In her review of the literature Dean (1981) found a high propensity for women to use more medicine than men. An English study looking at consultation rates of men and women over the course of one year found that women not only consult more frequently than men, but the correlates of primary care utilization also differ (Briscoe, 1987). This study found health status (need, or poorer health) and social role factors (including parenthood and marital status) to be more important for men, while psychological predisposition was of greater significance among women. Similar findings were reported by Dean (1983), who found that women both consult their physicians more frequently than men and are more likely to report psychological distress.

A second characteristic consistently related to differential patterns of response to illness is age. A study by Ingham and Miller (cited in Perrault and Malo, 1987) found fewer consultants among elderly persons of both sexes. Dean (1981) found that the self-care responses to common illnesses tended to assume a medical and ameliorative characteristic among older persons. Symptom responses of younger persons on the other hand, were more often directed toward the cause of the problem or toward reliance on social rather than medical resources. Other studies have also found positive correlations between non-prescription medication use and age (Russell and Forman, 1985 in Perrault and Malo, 1987).

There also appears to be a difference in how people respond depending on the frequency of occurrence and length of time a symptom or problem is experienced. In studying response

to both respiratory and musculoskeletal symptoms, Verbrugge and Ascione (1987) found that on respiratory days, how miserable a person feels is the main stimulus to action. On musculoskeletal days, sociodemographic characteristics figure more strongly. These authors conclude that the differences in response are consistent with the way people in general respond to acute versus chronic conditions. For chronic problems, strategies of care which have developed over months and years are applied during flare ups, while for acute problems decisions about care are made in the short run and hinge mostly on symptoms (Verbrugge and Ascione, 1987). This finding can be seen as complementing the data on age. As chronic problems are more common and on-going in the older population, coping strategies to ameliorate symptoms develop over time.

Another important characteristic affecting response to illness is perceived seriousness and past experience with a particular symptom or set of symptoms (Banks & Keller, 1971, Campion & Gabriel, 1985). Thus people who have previously experienced and successfully managed an illness are more likely to engage in self-treatment if the problem occurs again. Related to this is perception of health in general. Both Dean (1986) and Russell and Forman (1985) conclude that frequent consulters of physicians generally believe themselves to be in poorer health, perceive their symptoms as serious, and feel that the physician will actually be able to do something to help.

A special comment should be made about maternal treatment of children's health problems. As was previously noted, mothers only consult a physician on the average of once for every 12 new symptoms experienced by their child and consultation rates decrease with the number of children in the family (presumably mothers feel less need to consult a physician as they gain experience with the usual childhood health problems (Campion and Gabriel, 1985). Although the tendency to consult does decrease with subsequent children, age is another criterion emphasized by the mothers in Campion and Gabriel's study. Because mothers tend to view symptoms such as vomiting as more serious in younger children, consulting rates are higher when the children are young. In general however, mothers treat their children's illnesses with non-prescription medications rather than with physician consultations (Campion and Gabriel, 1985, Maiman et al., 1985). A 1982 study found that two-thirds of mothers sampled kept four to eight different types of medications on hand for use if their children became ill (Maiman, Becker, Cummings et al., cited in Maiman et al, 1985). A later study of 500 mothers by the same authors found that a high percentage of mothers questioned reported possession and use of a wide range of medications. Possession of analgesics, cough and cold remedies, dermatologicals for chafing and medications other than

antihistamines for allergy were mentioned by 50% of mothers questioned, while more than 20% mentioned rash and anti-infectives dermatologicals, vitamins, Ipacec, antinauseants, antidiarrheals, laxatives and antihistamines (Maiman et al., 1985). These findings also show a correlation between socioeconomic status and medication possession and use. The higher the mother's SES, the more likely she is to have a medication category on hand and to report its use (with the exception of laxatives). The amount of research identifying women, and mothers in particular, as consumers and dispensers of medication and as users of the health care system in general has important implications. This group must receive particular attention in the targetting and development of strategies to promote the use of non-drug self-care interventions.

Is Self-Care Appropriate?

Several studies have attempted to evaluate the individual's self-care decisions from a professional perspective. An Australian study by Wilkinson et al. (1987) used a panel of six experienced general practitioners to evaluate the actions taken by 340 respondents who had experienced a minor symptom or condition in the two weeks prior to the interview. Those whose actions were most likely to be judged as inappropriate were those who had taken left-over prescription medications (28%), followed by those who had used over-the-counter medications (13%). A similar evaluation of non-prescription medication use was also found in an American study by Maiman et al. (1985). Here an expert panel of six pediatricians showed little enthusiasm for the mother's use of OTC medications for their children. These studies suggest that physician-recommended interventions are perceived by physicians as the most appropriate treatment interventions. Physician support for self-care measures will therefore be important if these alternative measures are to be professionally endorsed.

But Can It Work? - Evaluating Self-Care Initiatives

A few studies have attempted to specifically evaluate the effect of self-care educational initiatives. A 1980 study on the effect of a self-care book on physician visits illustrated no significant decrease in consultations over six and 12-month study periods, although researchers did uncover a positive effect of the book on both attitude towards self-care and on confidence in management of medical problems (Moore et al., 1980). Other researchers have found a more direct relationship between consultation rates and the introduction of medical self-care materials. In looking at the timeliness of ambulatory care utilization following the introduction of medical self-care materials (including

the same book used in the Moore study), Vickery, et al. (1983, and Vickery et al., 1989) found that no adverse effect on health was identified when comparing subsequent illness days and hospitalizations, despite a trend in experimental subjects to delay consulting a physician. These researchers concluded that medical self-care interventions, particularly in the form of written materials containing decision-making algorithms, can reduce utilization and improve patient's ability to judge visit timeliness. Similar results were found in a study by Roberts et al. (1983). Using a symptom-based algorithm and brief educational package in a randomized, controlled, blinded clinical trial, researchers found a decrease in rates of consultation for upper respiratory tract infections with no consequent increase in medical complications.

Although there is a dearth of data evaluating self-care initiatives, results of these few studies are encouraging. Fears about self-care causing either an inappropriate delay in seeking medical care or an increase in medical complications appear unfounded. In order to reinforce these findings and further assess the effects of self-care interventions however, careful evaluation of any new self-care initiatives must be undertaken.

Summary; What Do We Know?

The above review illustrates several points. First of all, self-care is a fact of life for much of the population in numerous countries, as people are generally parsimonious when it comes to accessing the formal care system. A significant proportion of the population has consulted an alternative practitioner at some time, with chiropractors being the most popular of these practitioners. Women in general tend to consult more and are more likely to use OTC medications; women are also more likely to be used by others for lay consultation. Age, perceived severity, past experience with an illness, and perception of the efficacy of the formal care system have also been found to have an effect on consultation behaviour.

Although the actual data is sparse, it has been suggested that self-care educational materials can have a positive effect on people's consultation-seeking behaviour without the negative effects of increasing morbidity and subsequent hospitalization. Educational materials which include decision-making algorithms seem particularly helpful in encouraging the appropriate use of the system.

This review suggests that developing self-care materials for use by consumers is worthy of consideration. People appear willing to try interventions other than consulting their physicians; one might even postulate that the high use of

non-prescription medications is partially due to a lack of knowledge about other alternatives. Providing people with a number of different options for dealing with occasional, non-acute symptoms could feed into the population's willingness to engage in self-care. It might also have some effect on both the amount of non-prescription drugs consumed, and the number of unnecessary physician visits. The potential effect on drug consumption would be of particular benefit, for there are often safer, and at least equally (if not more) efficacious alternatives to many over-the-counter medications. These alternatives are also frequently less expensive.

This review looked at a studies from a variety of countries with a range of health care systems. Because similar results were often found across countries, despite differences in philosophy of care and financing of the system, it is felt that cautious statements about the application of these findings to the Canadian context is possible. Further Canadian studies, particularly in the area of self-care as it relates to physician utilization, and use of alternative practitioners are necessary before one can confidently apply this information without reservation.

BENEFITS, RISKS AND CAUTIONS

Encouraging self-care behaviours for occasional, non-acute symptoms can benefit both the consumer and the health care system. For the consumer, knowledge of a variety of alternatives to the commonly used over-the counter and prescription medications provides more choice in caring for minor illnesses and thus provides a broader scope for the decision-making process. As knowledge of alternatives increases, so do opportunities for personal autonomy in matters of health.

The health care system can also benefit from an increase in self-care by consumers. If education on self-care alternatives results in effective use of prescription and non-prescription drugs, then it is possible that there can be a decrease in the number of medical complications caused by drug interactions or drug over-use or misuse. Freeing resources by reducing drug-related problems will then increase the resources available for acute illness. Financial benefits can also be realized if knowledge of self-care alternatives results in a more efficient use of physician services.

Although there are definite benefits to encouraging self-care and educating consumers about self-care options, there are also a number of risks inherent in a project such as this:

Risk to consumers must be carefully considered, with caution taken in describing both the ailments and interventions. It would be dangerous to suggest that self-care is appropriate for all symptoms at all times, without heeding the real, yet often subtle signs which can herald a serious illness. The illnesses or symptoms included in any consumer educational materials must be limited to those occasional, non-acute, and generally self-limited problems that occur frequently in healthy adults but pose little risk of serious complication. Equally important, interventions must be carefully evaluated with none of the suggested alternatives posing any material risk to the consumer. The object of a tool encouraging self-care behaviours is wise, appropriate use of the health care system. This tool would have to complement, rather than supplement more formal care.

There is also a risk to government in the sponsoring of educational materials which promote self-care by actually suggesting specific interventions. There is a danger that physicians and/or pharmacists will perceive this type of educational material as treading upon their domain by prescribing solutions to common ailments. Both these groups may also perceive this type of endeavor as the government's attempt to contain costs at the professional's expense. The initial survey of both physicians and pharmacists was an

attempt to counteract this potential problem; however an awareness of this risk must be maintained in the preparation of any consumer-oriented educational material.

A major risk of this project lies in the basic philosophy which promotes self-care and individual responsibility in matters of health. While it is important to encourage individual self-sufficiency, it is also important to be aware that many health care problems have social, rather than personal roots and are thus beyond the power of any individual to alleviate. One must take particular care not to "blame the victim", or to ignore the social causes for problems; one must take care to avoid seeing self-care as a panacea for all health problems at the expense of social action. It must again be emphasized that self-care can only be seen as a complement to other interventions which take place on a broader level; it cannot be considered as a substitute for working to remove inequities in health.

INTERVIEW PROCESS

Without the support of the medical and pharmaceutical communities, the development of government supported self-care materials would not be politically feasible. To gain a feel for professional support, a group of physicians was interviewed around issues which ranged from consultation patterns to their perceptions and acceptance of patient self-care interventions. Because the interventions ultimately to be included in any consumer education will suggest drug-free alternatives, pharmacists were also included in the interview process. Their perceptions of the role and efficacy of the medications they dispense, and the potential usefulness of non-drug alternatives has provided valuable insight to the feasibility of this project.

A convenience sample of 32 practitioners was interviewed - 16 each of physicians and pharmacists. For the most part, practitioners were chosen at random from the phone book; in order to ensure the inclusion of physicians who combine alternative treatments with more traditional care suggestions were also solicited from members of the advisory committee who could recommend appropriate contacts. Only family or general practitioners were included in the physician interviews, as they are the doctors most likely to see the types of ailments being considered. In order to gain some feel for the differences in practitioners in urban versus rural and northern versus southern areas, as well as practitioners in different parts of the province, interviews took place in a number of different localities throughout the Ontario. (Appendix II provides a breakdown of the locations of the various physicians interviewed and a brief description of their practices)

Community pharmacists included those working in private as well as chain pharmacists. Pharmacists working in hospital or clinic settings were not interviewed, as patients who use their services generally have different needs than those coming into a neighbourhood pharmacy. Both owners and employee-pharmacists were interviewed and interviews took place in a variety of localities. (see appendix II for the breakdown of interview localities and a brief description of the pharmacy's clientele).

Interviews were carried out by the research assistant during late August and throughout the month of September. All the Toronto and Ottawa interviews, in addition to the physician interviews in Niagara-on-the-Lake were done in person, while the other physicians and pharmacists living outside Toronto were interviewed over the telephone. It was initially expected that all the interviews would be conducted in person; time constraints and a desire to contain costs made this impractical. There was no difference in the richness of answers given in telephone versus personal interviews - in fact, it often seemed that the anonymity of a phone interview encouraged the interviewee to talk more freely.

Although interviews were structured upon the interview questionnaires, the interviewer allowed the opportunity for the practitioners to raise other concerns and perceptions as well. Time per interview ranged from fifteen minutes to close to an hour, depending on the interviewee's interest and desire to talk.

Nearly all the pharmacists approached agreed to participate. Those who refused usually did so in situations where the interviewer appeared without prior appointment and asked if they had some time. In this situation most offered to be available at another time.

Finding physicians to interview was not always as easy. Approximately fifteen physicians, most of whom were working in larger urban practices, did not feel that they could afford the time to be interviewed, particularly without financial remuneration. Rural practitioners, those with smaller practices, (or those who practice at a slower pace), and those working in a salaried setting were more willing to take part in this project. It is important to be cognizant of the high rate of refusals in urban settings when drawing conclusions from this investigation. One must wonder if those who refused would have articulated different views and perceptions from those physicians who agreed to participate.

Although the sample was by no means representative of either the province's physicians or pharmacists, the interview process did provide some idea of the professional support for the development of self-care educational materials that

do not require the use of drugs or medical intervention. Interviews also provided valuable insight into the concerns of the province's practitioners, while at the same time offering these professionals the opportunity to verbalize, to someone who would ultimately be reporting back to the government, their views on increasing the efficiency of the health care system. It is interesting to note that very few of the physicians and only slightly more of the pharmacists had any prior familiarity with the Pharmaceutical Inquiry; for many, particularly those outside Toronto, this survey provided a unique opportunity to make their voices heard.

DEVELOPMENT OF A LIST OF COMMON AILMENTS

As a means of beginning a dialogue with physicians and pharmacists, interviews focussed on a set of 11 specific symptoms, which the advisory committee felt would be amenable to self-care interventions. Discussion centered on how much of an effect these symptoms had on their practice; for example questions were asked about common reasons for consultation, prescription and non-prescription drug use for these symptoms, and the appropriateness of the usual patient self-care behaviours. Both physicians and pharmacists were also asked to consider any other possible interventions which they might recommend, and were questioned about their evaluation/perception of a variety of measures which patients could try at home. This second part of the interview was aimed at assessing practitioner's knowledge and acceptance of a drug-free self-care options.

The 11 conditions which formed the framework for discussion were:

Upper respiratory symptoms/colds
Constipation
Diarrhea
Heartburn/indigestion
Minor skin problems
Allergies
Insomnia
Fatigue
Stress
Headache/neck pain
Backache

Why did we choose these illnesses?

The conditions used for interviews with physicians and pharmacists developed from a number of sources. First suggested by the practitioners on the advisory committee, they were then confirmed by the literature as being among

the most common complaints seen by family physicians in a number of countries. Verbrugge and Ascione (1987) for example, identity musculoskeletal complaints (primarily due to arthritis, injury and overexertion) and respiratory problems as the most common symptoms experienced by adults on a daily basis, based on their review of American and British studies. In looking at symptom experience and consequent health actions, Banks and Keller (1971) identified frequent colds, nervousness, headaches, rash or other skin troubles, back pain, and constant tiredness among their list of frequent health problems. Similarly colds, lumbar pain, depression, influenza, and skin rash, were all included in a study of response to six common illnesses in the Danish population (Dean et al., 1983).

Although these of symptoms have a variety of causes they have several things in common. First, most are either self-limited (for example colds or bowel problems), or can be helped by a self-care intervention such as a change in diet, (bowel problems, heartburn and some allergies), an increase in exercise (constipation, backache, fatigue), or the development of new coping skills (headache, stress, insomnia). Second, they are all illnesses which are frequently treated by over-the-counter medications; medications which are promoted heavily in the media. As a result, they create a starting point for a discussion on self-care.

Interview Questionnaires

Because physicians and pharmacists have different terms of reference, slightly different interview questions were asked of each type of practitioner. Physicians were asked primarily about their perceptions of consultation practices, while pharmacists were questioned on their perception of prescription and non-prescription drug utilization. Pre-testing of the interview questionnaires indicated a number of weaknesses in the initial questionnaires; revised questionnaires can be found in appendix I.

CHRONOLOGY AND ROLE OF THE ADVISORY COMMITTEE

The advisory committee for this project was established in consultation with the Executive Director of the Pharmaceutical Inquiry. It met a number of times during the life of this project; in mid-June, to discuss the general direction of the project, in early August, following completion of the literature review and preliminary development of the interview questionnaires and prototype of consumer educational material, and again in mid-September, to review results of physician and pharmacist interviews and

to assist in the development of final recommendations. Aside from these formal meetings, all members of the advisory committee were sent a copy of the Interim Report to review before it was submitted to the Inquiry in September; numerous revisions and corrections were ultimately made based on the committee's comments. Members of the advisory committee were also individually consulted on an ad hoc basis as need, questions, or concerns arose.

RESULTS OF PHYSICIAN AND PHARMACIST INTERVIEWS

In order to provide background to the final recommendations of this report, a summary of physician and pharmacist interviews is necessary. This summary will focus on the overall perceptions of the practitioners surveyed; a more detailed breakdown of some of the answers can be found in appendix III.

All of the physicians and pharmacists agreed that the 11 problems outlined are indeed reasons for both frequent consultations and a high use of prescription and non-prescription drugs. Most of the practitioners also felt that many of these conditions (although not all) could be amenable to self-care behaviours which do not include either drugs or a visit to the doctor. Nearly all the practitioners surveyed saw allergies as inappropriate for self-care interventions that do not involve the use of medication, four physicians wanted backaches removed from the list, three physicians and one pharmacist saw heartburn as inappropriate, and eight physicians and four pharmacists perceived that fatigue, stress and to a lesser extent insomnia require physician intervention, at least for the purpose of an initial assessment. Suggested additions for self-care interventions included menstrual cramps (three practitioners), minor sprains and strains, osteoarthritis, cholesterol problems, vaginitis, minor eye irritations, lice and scabie infestations, birth control, foot care, and weight problems.

Few physicians perceived unnecessary visits to be a problem, stating that even if the problem could have been cared for at home, any visit is legitimate if the patient is concerned. Congruent with the literature, many stated that although there are certainly some people who make inappropriate or indiscriminate use of the health care system, the majority of patients first try to remedy their problems at home. Self-care strategies primarily involve over-the-counter medications, herbal or folk remedies, vitamins, or waiting and watching. One physician did state however, that while the number of patients who make unnecessary visits is small, these patients often take up a sizable portion of physician time, as they frequently

require extensive education. Physicians in general felt that most patients' attempts at self-care are appropriate; pharmacists, on the other hand felt that there is often a great deal of inappropriate over-the-counter drug use. The major problem with inappropriate self-care, according to both pharmacists and physicians is one of "overkill" - people taking combination drugs when single ingredient products would be adequate, or people taking drugs when perhaps diet, exercise, or other non-drug measures could have been appropriate. One physician also stated that self-care interventions tend to focus on symptoms, rather than the cause of illness.

Antibiotics for colds, analgesics for headaches and backaches, hypnotics and sedatives for insomnia, and minor tranquilizers for stress are the drugs most frequently being prescribed and dispensed according to both physicians and pharmacists. There was a consensus among those surveyed that a high proportion of the population sees prescription and non-prescription medications as a panacea for whatever ails them, despite having an inadequate understanding of what the drugs actually do or their potential interactions. Thus people often self-medicate inappropriately, particularly when they buy over-the-counter drugs without seeking the advice of a pharmacist. Drug advertising, a "pill-oriented" society, and people's desire to "get well quickly", (or at least suppress symptoms quickly) with the least amount of bother were the perceived reasons for a general reluctance to try alternative, but slower acting interventions.

A variety of suggestions were offered as strategies for increasing the efficiency of the health care system. A number of these were political in nature; one rural physician advocated full capitation for all physicians, three felt that some sort of user fee for misuse of the system would be appropriate, while two others advised increasing OHIP payments for smoking and alcohol counselling, stating that a high percentage of illnesses are caused either directly or indirectly by these substances.

Many of the suggestions for increasing efficiency and cutting down on inappropriate medication use were drug related. Several pharmacists advised decreasing the number and types of drugs available on drug benefit plans. In a similar vein, one pharmacist suggested removing laxatives (which he felt are highly misused) from all drug benefit plans and instead giving elderly people a lump sum every month to be used (or not) for this purpose. Two pharmacists felt that the drug formulary, rather than detail men, should dictate physician prescribing practices. Other drug related recommendations involved increasing physician-pharmacist conferencing, limiting patients to a one-month-only supply of drugs, and keeping more non-prescription drugs either in

or right near the dispensing area of pharmacies, in order to encourage consumers to ask for advice.

There was also unanimous agreement that education is a basic prerequisite to any real change in the system. Many practitioners saw the elderly as the primary group to target (seven pharmacists and six physicians specifically focussed on the elderly during the interview) because of this group's high consumption of prescription and non-prescription drugs. Other recommended target groups included mothers, particularly mothers of young children and women in prenatal classes (five physicians), high school students, people within the age group of 20 to 45, yuppies, and the population in general. Five pharmacists also felt that physicians should be targeted for drug education.

The types of educational strategies discussed include both written, computerized, and media interventions. Pamphlets were seen as appropriate only if short, specific, and written in language that people can understand. Although two pharmacists felt that written materials would be their first choice of educational medium, there was a general feeling that pamphlets usually only reach the converted; that people who actually read them would probably search out the information in another form if no pamphlet were available. Five pharmacists and four physicians commented that computers and/or videos could be used to impart self-care information, particularly if programs involve algorithms to help people make self-care decisions. Four pharmacists and seven physicians felt that T.V. would be the best way of reaching the public and counteracting the barrage of messages from drug manufacturers. Several pharmacists also saw posters, and stickers on non-prescription drugs advising consumers about drug interactions as an important educational medium.

Numerous practitioners felt that lifestyle information should comprise the bulk of educational materials. Two physicians, both working in smaller settings, stated that the best type of information would be common-sense "granny" advice, suggesting tried and true home remedies. Most of the pharmacists on the other hand. strongly suggested that any educational strategy should focus on appropriate use of medications, including non-drug interventions where appropriate. Thus suggestions included advising consumers about the drug interactions of the medications they are taking, and providing a more general teaching that every physician visit need not end with a prescription, in addition to advice about the types of drug-free self-care behaviours that people could try at home. All the pharmacists interviewed also stated that the public should be educated about the role of the pharmacist, with both consumers and physicians encouraged to use this professional as a resource. Only one pharmacist felt that educational

materials should focus primarily on non-drug alternatives. (appendix III provides specific examples of physician and pharmacist suggestions)

Although a great deal of agreement between physicians and pharmacists was apparent, one striking difference must be discussed. When asked about the high rate of prescription drugs being dispensed all the pharmacists but two attributed this to a pressure on most physicians to prescribe. However, when asked if they actually did feel pressured by their patients to prescribe medication, only two physicians stated that this was a common problem. While several others felt that this was an occasional concern, they generally clarified this by stating that the pressure was generally felt with older patients, patients on drug plans, or patients from ethnic populations. The other practitioners stated that they did not feel this pressure because they already prescribed fairly freely (one physician), or because they had taught their patients that prescriptions were not always necessary. This difference in perception has important implications for educational purposes, particularly if educational strategies are to focus either on teaching consumers about the benefits and limitations of prescription drugs, or on affecting physician prescribing practices.

In general, practitioners were amenable to the idea of promoting non-drug self-care behaviours, particularly as an alternative to the high use of over-the-counter medications. However, most were adamant that the materials contain only basic, proven information, with nothing "far out" or "flaky" being promoted. Many were most comfortable with very basic lifestyle information; depending upon the home remedies commonly used by their own patient populations, they were or were not comfortable with measures such as chamomile or peppermint tea for heartburn, flaxseed oil for constipation, or garlic for colds. One physician who works for the OMA stated that he would only endorse self-care materials and recommend them to the province's physicians if the information is scientifically sound, easily amenable to self-care, and not in "left field". This physician was in the minority however; most practitioners (particularly those with ethnic and rural practices) were more comfortable with the range of drug-free alternatives which can be found in appendix IV.

Although most practitioners reacted positively to this project, a number of reservations and cautions were also expressed. Five pharmacists were concerned that promoting drug-free alternatives, particularly on a large scale, could have a negative effect on both their business profits and professional profiles. They worried that the project's underlying agenda is to decrease costs to the government at the pharmacists' expense. Two physicians maintained that

the interventions suggested in educational materials must not travel beyond broad lifestyle advice into the realm of diagnosing or prescribing. Two other physicians stated that even if self-care is strongly promoted, patients should be reassured that the physician will still be available to those in need.

A number of practitioners also cautioned that education is a long-term strategy with results becoming apparent only after several years. Thus a long-term commitment by government was strongly recommended.

SUMMARY AND CONCLUSIONS BASED ON INTERVIEW PROCESS

In summarizing the information gathered from physician and pharmacist interviews, several things become apparent. Of primary importance are the consistencies with the literature. These consistencies both allow greater confidence in drawing conclusions from the literature review and have important implications for planning self-care educational strategies.

The first consistency wit the literature is the perception by physicians that unnecessary visits are not a problem. This is particularly important for setting philosophical directions for self-care education. If physicians are to support this project and encourage self-care behaviours in their patients, education must be sensitive to this perception. Thus, self-care should be promoted as a means of providing increased options in caring for minor illnesses, increasing autonomy in matters of health and ensuring the most effective use of health care resources, rather than as a means of decreasing unnecessary visits.

A second consistency can be found in the types of self-care behaviours that people engage in. The literature and the practitioners surveyed also agree that while drug use is the primary self-care intervention for much of the population, drugs are not always used as appropriately or effectively as they might be. Acknowledgement of the prevalence of medication use as a major self-care intervention must be an important force in directing self-care educational efforts.

As a result of insights gained through physician and pharmacist interviews, a revision of the list of 11 common symptoms list is necessary. Allergies and fatigue should be removed completely, while interventions for backache might suggest an initial assessment by a qualified practitioner. Although a number of physicians felt that stress requires physician intervention it should not be taken off the list completely. Giving the message that stress is not amenable to self care further medicalizes this problem, tells people

that they can have little control over their own mental health, and may consequently encourage increased tranquilizer use.

Similar reasoning requires insomnia to remain on this list. Many of the physicians interviewed stated that they frequently prescribe low dose hypnotics or sedatives for insomnia, something which was corroborated by the pharmacists. Over-the-counter sleeping pills are also heavily promoted in the popular media as the best way to deal with occasional sleep problems. Long-term use of sleeping medication however, can interfere with normal sleep cycles and create a dependence on the drugs. Educating consumers about the range of drug-free alternatives to this type of medication could both increase the range of options available to people with insomnia, and, because of the nature of many of these alternatives (such as relaxation, meditation, exercise or yoga), encourage the development of valuable life skills.

The high rate of consensus regarding education as an important strategy encourages the promotion of self-care education. However, as indicated by pharmacist and physician interviews, education should not focus only on non-drug interventions. Since both pharmacists and physicians identified a need for information on the appropriate use of medications, practitioner support will be more likely if pharmacist and physician concerns are addressed. An attempt to ensure that the role of the pharmacist is not diminished must also be part of any future actions.

The literature identifies women, and mothers in particular as an important source of health care information. Because this group was also identified by pharmacists and physicians as an important group to target, self-care interventions should be directed to them. The elderly should also be considered as an initial target group, as seniors were identified several times by both types of practitioners.

If these interviews reflect the field, it is possible to conclude that there will be little physician or pharmacist opposition to the production of a government sponsored guide to behaviours which do not involve the health care system in the personal response to common, yet occasional non-acute symptoms or maladies. If however, there is to be strong support for drug free-alternatives other than the familiar lifestyle interventions, then educational strategies must first be directed to physicians and pharmacists. When asked if they would feel comfortable with the promotion of interventions such as flaxseed oil, valerian, chamomile, peppermint tea, or aloe vera, the comments most frequently heard during interviews were either "I don't know, I know nothing about this substance" or "I need empirical data

showing its effectiveness". If doctors and pharmacists (who are perceived by the public as credible sources of treatment information) are to endorse and recommend drug-free self-care behaviours, they must first be familiar with these measures themselves. If not, they, like the consumers who stick with "tried and true" medications, will continue to shy away from anything but the most traditional modes of treatment. It is interesting to note that practitioners whose practices included a high ethnic population were both more familiar and more likely to feel comfortable with and endorse a variety of "ethnic" or "home" remedies. This suggests that it is unfamiliarity, rather than an irrational refusal that prompts most of the practitioner reluctance to suggest or endorse a wide range of drug-free alternatives for caring with common, non-acute ailments. Providing opportunities for physicians, and pharmacists to increase their knowledge about non-drug options is the first step in encouraging widespread use of these interventions.

In looking at ways to decrease the rate of inappropriate medication use and encourage efficient use of the health care system, it is also important to remember that medication use is presently the primary self-care behaviour engaged in by much of the population, and a common concern of both physicians and pharmacists. Teaching the public that alternatives to drugs exist is important; it is likely that a knowledge of these alternatives may encourage people to try them when they experience the related symptoms. However, as a long-term strategy, education should also address the issue of appropriate medication use. Knowledge of how, when, and why to use prescription and non-prescription medications for occasional, non-acute symptoms, may, in the long run have as much an effect on medication use as will information about non-drug alternatives. Addressing the issue of appropriate medication use is also more likely to ensure the support of physicians and pharmacists, for both groups have identified this as a need. As a result a two-pronged strategy is ultimately needed if widespread results are to be seen. Education about drug-free alternatives should be coupled with education on the appropriate uses of medication. As single strategies, each will reach only a portion of the population; working synergistically they could reach a larger audience, and hopefully, have a measurable effect on the public.

RECOMMENDATIONS AND FUTURE DIRECTIONS

Two types of recommendations have developed from this investigation. These can be divided into STRATEGIES and BEGINNING STEPS. Each will be looked at individually.

RECOMMENDED STRATEGIES

1. DEVELOPMENT OF STRATEGIES FOR EDUCATING CONSUMERS ABOUT EFFECTIVE DRUG USE

The development of strategies for educating consumers about the wise use of prescription and non prescription drugs is recommended. This should be done in consultation with a committee of pharmacists practicing in a variety of settings from across the province. The issue of both prescription and non-prescription drugs use should be addressed.

2. DESIGNING CONSUMER EDUCATION ON DRUG-FREE SELF-CARE BEHAVIOURS

A concurrent strategy of designing strategies for consumer education on drug-free alternatives is also recommended. Educational efforts should initially be limited to those occasional, non-acute maladies that formed the basis of this project. Education should clearly state that these interventions are designed for healthy adults, for short-term use only. The types of interventions to be included would be similar to those presented in appendix IV.

3. EXPLORING INNOVATIVE APPROACHES TO EDUCATIONAL STRATEGIES

A variety of educational strategies should be explored and their impacts evaluated. These strategies include:

a. Television/Radio

T.V. and radio are strongly recommended as the primary media for broadly based consumer education. These reach a wide audience, and could be an effective counterbalance to the barrage of media drug advertising. The most effective strategy would be a series of "ads", or a regular "health spot" on one of the television networks, as this would reach the largest audience. Public service announcements or a health spot on one of the cable or public broadcasting networks would also be worthy of consideration.

b. Pamphlets/Written Materials

Pamphlets or brochures are recommended as a second strategy choice, or one that could be considered concurrent with media interventions. A series of pamphlets, brochures or flyers, each on a particular problem, rather than a large booklet dealing with a variety of ailments is recommended. All written information should be short, concise, in large print, and written so that even consumers with low literacy skills could understand the information being presented. Literature should also be translated, from

the start, into a range of different languages. Rather than providing consumers only with information about the ailment and offering non-specific suggestions for treatment, literature should help consumers make appropriate decisions about how they should proceed to care for themselves. This can best be accomplished through the use of ALGORITHMS, or decision-making trees, which suggest different responses for differences in presentation or acuity of symptoms. Presenting symptom-specific information in this manner may minimize the danger of inappropriate use of self-care interventions when professional care is necessary. It is possible that the use of algorithms may also increase people's confidence in making health care decisions.

Written materials should be made available to consumers, free of charge, at pharmacies, doctor's offices, and at the offices of both traditional and alternative health care practitioners. It should also be made available through public health offices and other community resources. A bibliography of related background information and empirical data should be made available to practitioners in order to facilitate their understanding of the alternatives being suggested.

c. Computer/Media Strategies

Consideration should be given to the eventual development of computer-based educational materials to be available in pharmacies and physician or other health care practitioner's offices. Using algorithms, this type of tool could allow people to either compare their own symptoms with those outlined on the computer, or type in their own list of symptoms (for a specific number of conditions) and receive in return, a list of actions which would be appropriate to take. This is a long-term strategy and should be developed in consultation with health care practitioners (including alternative practitioners) and computer experts.

4. ESTABLISHMENT OF AN ADVISORY GROUP ON DRUG-FREE ALTERNATIVES

An advisory group, with members representing professionals (including both traditional and alternative practitioners), consumers and government should be established. This group would meet on a regular basis to plan and direct the educational efforts and to review appropriate literature.

Including a wide range of interests on this group would ensure that educational strategies are sensitive to the needs of both practitioners and consumers, and that no one viewpoint or philosophy is over-represented.

BEGINNING STEPS

1. EDUCATING PHYSICIANS AND PHARMACISTS

As a first step, actions should focus on educating physicians and pharmacists about the range of alternative health care options available to consumers, with particular emphasis on drug-free self-care interventions. This could be done through seminars, or the development of a regular newsletter which would provide access to anecdotal and empirical information on a variety of alternative treatments. This newsletter should be developed in consultation with a group made up of a wide range of practitioners (similar to the advisory group for this project) and sent to all physicians and pharmacists in the province, free of charge. Information could then be supplemented by seminars discussing drug-free options. These seminars should be open to all interested health care professionals. Implementation of this recommendation is of primary importance as without the endorsement of physicians and pharmacists the widespread adoption of drug-free alternatives is unlikely.

2. DECIDING ON APPROPRIATE TARGET GROUPS

Based on the literature review and practitioner interviews, women (particularly mothers) and seniors are recommended as the initial primary target groups. Later target groups should include high school students. Other target groups should be explored in consultation with the recommended advisory group.

OVERALL RECOMMENDATION

LONG-TERM GOVERNMENT SUPPORT FOR EDUCATION

Long-term government support (three to five years) is necessary if attempts to change the medication-taking and self-care behaviours of consumers are to be successful. Although results may be evident after short-term educational efforts (for example a media blitz that occurs over a period of one to two months), a long-term strategy is still needed to ensure follow-up and reinforcement. Recommendations in this report involve educating both practitioners and the general public; achieving this will require educational efforts to take place over a period of three to five years, with mechanisms then put in place to provide ongoing

reinforcement. As such, it is imperative that government support be maintained over a long period of time, if any real change in consumer behaviour is to occur.

FINAL CONCLUSIONS AND COMMENTS

From the above it is possible to conclude that while there may not be a loud public outcry from either physicians or pharmacists if non-drug interventions for occasional non-acute maladies are promoted, neither will there be widespread endorsement of these materials unless a number of preliminary steps are undertaken. At this time, few physicians or pharmacists are familiar with the range of drug-free alternatives available to consumers; consequently most mistrust anything but the most basic lifestyle interventions. While the government could limit itself to lifestyle-focussed consumer education, it is doubtful that this would be a cost-effective effort as there is already an abundance of this sort of material on the market and in the popular media. The most important step in promoting a range of drug-free options therefore, is the education of physicians, pharmacists and other traditional health care providers.

Ultimately, making consumers aware of their options, and educating them about non-drug self-care behaviours is a good idea. It is important that the public be made aware that drugs are NOT always the only answer - that options exist that can be safer, less expensive, and equally efficacious as the medications which are taken as an almost automatic response to illness. Merely providing information about alternatives however, is not enough to ensure that these options are used. While it is likely that education about drug-free alternatives will affect those who are already concerned about their own medication use, or the medications being used in their families, it may not reach those who continue to see drugs as the panacea to all illness, without ever evaluating what they are taking. A more broadly based strategy of educating consumers about the effective and efficient use of drugs, including non-drug interventions, would be more appropriate. This type of strategy would help consumers evaluate both drug and non-drug self-care interventions within the context of their illness, and make educated decisions about their actions. Educating both professionals and consumers about a wide range of drug-free behaviours also brings these options out of the fringe of "alternative medicine" (something which many people are still unfamiliar and mistrustful of), and more into the range of traditional medicine. A two-pronged approach such as this therefore, would help validate these alternatives

and hopefully, encourage their adoption by a greater percentage of the population.

Although these conclusions and recommendations broaden the scope of this project somewhat, they are to this author, the only conclusions possible. Arriving at this point has been an interesting process, filled with a number of surprises and a great deal of thought about the health care system. Initially it was expected that the project would merely explore the feasibility of developing consumer education on drug-free self-care behaviours for a list of common ailments; the final result being a simple yes or no. From the literature review, and more important from physician and pharmacist interviews it quickly became clear that the issue was not so simple. The range of concerns about the health care system that were expressed, and the variety of suggestions and recommendations which practitioners presented to alleviate these problems forced this author to look at self-care more broadly. Once interviews began, it quickly became apparent that merely promoting a range of drug-free self-care behaviours would not meet a widely recognized need. Thus it became necessary to consider self-care in general, rather than self-care as it relates only to drug-free alternatives. As such, recommendations deal with the issue of self-care as it relates to both medication and non-medication taking behaviours.

The one thing that remained stable throughout this investigation however, was a conviction that the original idea of promoting the widespread adoption of drug-free self-care interventions remains a good one. A growing awareness, throughout the life of this project, of the extent to which people use both prescription and non-prescription drugs, often without clearly understanding or evaluating what they are taking or why they are taking a particular product, increased my determination to find a way of incorporating drug-free alternatives into the general scheme of health care. It is with this intention therefore, that the conclusions and recommendations of this report attempt to put non-drug alternatives into the context of people's present behaviours and practitioner's concerns. By doing so, it is anticipated that drug-free behaviours can become an important part of people's self-care behaviours. This project, through the implementation of its recommendations can then become, as was stated in the introduction, an important contribution to setting the stage for greater consumer participation and autonomy in matters of health.

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APPENDIX I

INTERVIEW QUESTIONNAIRES

Interview Questionnaire For Physician

Interview began by outlining the purpose of the project - ie.

> We realize that many people consult their physician for problems which they could take care of at home. We are trying to ascertain whether physicians perceive that people are making unnecessary visits, and to suggest some alternatives that people could try before calling the doctor.

Interviewer first outlined the 11 common symptoms and asked:

> At a first glance do these seem to be problems that you frequently see?
>
> What percentage of your "unnecessary visits" per month do you think these problems make up? (0-5, 5-10, 10+)
>
> Can you think of any other conditions that might belong on this list?
>
> Should any of these conditions be taken off this list? If so, why? (ie. are they potentially dangerous, could symptoms mask something else, are they concerns which should be seen quickly by a physician, etc.)

Interview then focussed more specifically on the 11 symptoms separately, asking:

> How often do patients have true treatment needs as opposed to problems that could be cared for without formal medical intervention?
>
> What have they usually tried before coming to you? (eg. OTC medications, "home remedies", etc.).
>
> How appropriate do you think their own attempts were?
>
> What do people generally want you to do for them - do they want medication, reassurance, tests, etc.?
>
> Do you often feel the need just to "do something" to appease your patients?

How do you feel about interventions such as...(here interviewer provided examples of the type of information that would be found in a self-care materials in order to gage the physician's attitude and acceptance of these alternatives)

What do you think could be done to encourage appropriate self-care make the system run more efficiently?

If some sort of educational literature were to be developed, what sort of material should it contain, and in what format? To what group or groups should it be targeted?

Interview Questions for Pharmacists

Purpose of project was described, with the emphasis on over-use and inappropriate use of both prescription and non-prescription medications.

Interviewer outlined the 11 common symptoms, stating that these are symptoms which, although they are are often amenable to self-care without the use of medication, are frequently treated primarily with drugs.

Do you feel that there are any other conditions that should be on this list?

Do you feel that any of these conditions should be taken off the list, and why?

Interviewer then focussed more specifically on the 11 conditions, asking:

For which of these conditions is there the greatest use of prescription drugs? What is usually used for the other conditions?

How necessary do you think the usual prescription medications for this condition are? If not, why do you think they have been prescribed?

How appropriate is people's use of OTC medications when bought without a pharmacist's advice? How safe is this type of drug use?

Why do you think that the use of OTC drugs is so prevalent?

How often do people come to you for advice on OTC medications for the problem (eg. how many times in a month do you get asked questions of this sort?).

How often do you think that the same results could be obtained with interventions other than medication? What sorts of interventions might be helpful?

What do you think of .... for this problem? (interviewer suggested some alternative treatments to assess pharmacist support for these options).

What do you think could be done to decrease the amount of inappropriate or unnecessary medication use?

If self-care literature was to be developed what kind of information should it contain and in what format? To what group or groups should it be directed?

APPENDIX II

PHYSICIAN PROFILES

1. Male physician practicing in the east end of Toronto. Established practice, with large ethnic (Greek, middle European) population.

2. Male physician practicing in West End of Toronto. Large Italian patient population.

3. Male physician who has been practicing for many years in a rural setting close to Orillia. Patient population consists primarily of farmers and other established rural dwellers, including a substantial Mennonite population.

4. Female physician practicing in East End of Toronto. Mixed patient population.

5. Female physician practicing in North Toronto, who also practices psychotherapy. Practice includes a high percentage of young, educated professionals ("Yuppies").

6. Male physician who has been practicing in the same Ottawa location for approximately 10 years. Mixed patient population, with some emphasis on parent-child health.

7. Older male physician who has been practicing in Niagara-On-The-Lake for many years. Established patient population from Niagara-On-The-Lake and surrounding area. Some Mennonite patients.

8. Older male physician who has been practicing in Niagara-On-The-Lake for many years. Established patient population from the town and surrounding area. Some Mennonite patients.

9. Male physician practicing in West End of Ottawa. Previously opted out of OHIP. Established, mixed patient population.

10. Female physician practicing in a large urban centre. European trained, has good knowledge of a variety of herbal remedies.

11. Male physician practicing in London. No other information available about this practice.

12. Male physician practicing in a Community Health Centre within a subsidized housing community in North York. Salaried physician, whose practice is approximately 80% patients of a West Indian background.

13. Older male physician practicing for many years in Hanover. Mixed patient population.

14. Non-practicing male physician working for the OMA.

15. Male physician who has been practicing for 10 years in Thunder Bay. Shares office space with a number of other physicians; practice includes the services of a dietician, an R.N., who provides patient education in addition to her other duties, and a nurse practitioner. Works in association with a psychotherapist as well, although he also provides psychotherapy to his patients. Mixed patient population.

16. Male physician who has been practicing in Iroquois Falls for one year. One of four physicians in a town of approximately 6500. Mixed practice, with a substantial proportion of the town's younger, better educated residents.

PHARMACIST PROFILES

1. Employee pharmacist working part-time in an independent community pharmacy in east end of Toronto. High percentage of senior citizen's as clients. Many prescriptions come from small medical building next door.

2. Pharmacy intern due to become licensed in September working in large downtown chain pharmacy. Pharmacy is close to numerous physician offices, as well as a large residential area.

3. Employee pharmacist in large chain pharmacy in a shopping mall in Toronto's west end. Large Italian and Portuguese clientele.

4. Pharmacist owner of small chain pharmacy in a residential area of North York. Mixed client population with a medium to high percentage of senior citizens.

5. Pharmacist owner of medium sized independent community pharmacy in Don Mills. Pharmacy also sells homeopathic remedies. Mixed clientele, with many clients on drug plans.

6. Employee pharmacist (head pharmacist) in small independent Ottawa pharmacy attached to a medical building. Most clients are patients of the physicians in the building.

7. Pharmacist owner of small independent pharmacy situated in a small medical building in west end Toronto. Very high Italian and Portuguese client population. Most clients are patients of a doctor in the building. Pharmacy stocks few items other than drugs and health care supplies. Pharmacist has been active in the Canadian Pharmaceutical Association.

8. Pharmacist owner of medium sized independent pharmacy in a medical building in downtown Toronto. Pharmacy sells a wide range of herbal medicines, vitamins, and homeopathic remedies. Mixed clientele; primarily business people from surrounding government office buildings or people looking for some of the specialized products this pharmacy has to offer.

9. Pharmacist owner of independent community pharmacy in Hanover. Mixed client population.

10. Employee pharmacist in large chain pharmacy in downtown Ottawa. Clientele made up primarily of professional - employees of the surrounding offices and government buildings.

11. Employee pharmacist in small independent pharmacy situated in a medical building in east end Toronto. Most clients are patients of doctors in the building. Many clients on drug benefits.

12. Pharmacist owner of independent community pharmacy in London Ontario. Many clients are patients of nearby physicians.

13. Pharmacist owner of small independent pharmacy situated in a medical building in Thunder Bay. Most clients are patients of physicians in the building.

14. Non-practicing businessman-pharmacist who is a partner in a company which sets up pharmacies in old age homes and medical buildings. Very active in the CPA.

15. Pharmacist owner of independent community pharmacy in Iroquois Falls. This is the only pharmacy in this town of approximately 6500. Most of the population consists of employees of a pulp and paper mill and their families.

16. Pharmacist owner of independent community pharmacy in Niagara-On-The-Lake. Mixed clientele.

APPENDIX III

EXAMPLES OF PHARMACIST AND PHYSICIAN RESPONSES TO SPECIFIC QUESTIONS

Because of the difficulty of including the wide range of physician and pharmacist suggestions for increasing the efficiency of the system and developing specific educational strategies in the text of the report, these have been provided below. It is hoped that this will provide additional insight into the report's final recommendations and conclusions.

QUESTION: WHAT DO YOU THINK COULD BE DONE TO DECREASE THE AMOUNT OF INAPPROPRIATE OR UNNECESSARY MEDICATION USE?

Physician Responses:

- Media counterattacks.
  counteract the influence of drugs.
  emphasize non-medical, non-drug treatments.

- Take drug advertising off television.

- Put information on drugs on a central computer for the use of physicians. Physicians could then personalized printouts for individual patients by typing in specific patient information about the patient's condition and drugs being used.

- Teach responsible medication use to patients. Discuss, educate about side effects, drug interactions, and the limitations of medications.

- Share the responsibility with all care givers from the receptionist through to the specialist, so that patients receive the same message from all care providers.

- Government checks on physician prescribing practices.

- Total capitation of the primary care physician for services.

- Provide patients with information about the cost of the services they use.

- Consider the implementation of minimal user fees for inappropriate visits.

- Increase OHIP payments for smoking and alcohol counselling, rather than spending money on lifestyle and self-care education.

- Ensure that education reaches the illiterate and those with low literacy skills and those who speak other languages.

- Increase public awareness of both appropriate drug use, and alternatives to drugs.

- Don't make education only a motherhood issue. Provide long-term support and provide follow-up.

Pharmacist Responses:

- Public education and awareness.

- Educate physicians.

- Educate both the public and the physicians about the role of the pharmacist. Encourage both to use the pharmacist as a resource.

- Decrease the amount of drug advertising to both physicians and the public.

- Increase the role of the pharmacist.

- Do not allow drug substitution without a valid reason - use only generic drugs.

- Implement a system similar to the OPA smart card.

- Limit people to a one month supply of drugs at a time.
- Look closely at physician prescribing practices.

- Increase the amount of physician-pharmacist consultation. Increase the regulatory with which medication profiles are reviewed.

- Make people pay for drugs such as laxatives rather than putting them on drug-benefit plans.

- Develop a warning system for drugs - eg. a chart on the wall outlining drug interactions contraindications, place warning stickers on OTC medications.

- Encourage physicians to see patients who require ongoing medication frequently.

- Increase the use of the drug formulary rather than the CPS or detail men both for prescribing information and the dispensing of drugs.

- Decrease the availability of many of the combination products.

- Limit the availability of medications in non-pharmacy outlets (such as supermarkets, convenience stores, etc.).

- Encourage consumers to ask for advice by encouraging pharmacists to keep a greater number of drugs in the dispensing area and have a sign saying "ask the pharmacist - there might be something better than what you see on the shelves.

- Encourage consumers to ask for advice by keeping OTC drugs close to the dispensary.

QUESTION: IF SELF-CARE EDUCATION IS DEVELOPED, WHAT KIND OF INFORMATION SHOULD IT CONTAIN, AND IN WHAT FORMAT?

Physician Responses:

Type of Information:

- Lifestyle information to promote good health.

- Information on safety and on prevention.

- Common sense "granny advice".

- A broad dialogue on health and health care.

- Age specific advice on a variety of conditions.

- Ensure that all education is scientifically sound.

- Focus on stress and it's effects on health.

- Provide information on the appropriate use of drugs.

- Provide realistic information on what drugs can and cannot do.

- Provide information on non-drug interventions.

Suggested Educational Strategies:

- Media blitz.

- Computers.

- Videos on specitic ailments.

- Pamphlets.

- Awareness weeks.

- Health fairs.

Pharmacist Responses:

Type of Information:

- Lifestyle.

- Information on prevention.

- Education on the role of the pharmacist.

- Information on specific concerns looking at drug and drug-free alternatives.

- Information on the effects, side effects, interactions and limitations of drugs.

- Information on how to use drugs appropriately.

- Teach that drugs are not always necessary.

Suggested Educational Strategies:

- Computers.

- Pamphlets.

- Warning signs on OTC medications.

- Warning charts on pharmacy walls.

- Media (T.V., radio blitz).

- Awareness weeks re drug use, caring for common ailments.

- Take the message to the people - talks in churches, hospitals, medical centres.

- Using the pharmacist to hand out information and discuss pamphlets.

APPENDIX IV

EXAMPLES OF DRUG-FREE ALTERNATIVES

Although consumer education should ultimately include information on effective drug use, this prototype will limit itself to drug-free alternatives. This is the information that was presented to practitioners during interviews; it is also the type of information that may be less familiar and more controversial to practitioners and lay persons alike.

PROTOTYPE OF MATERIAL TO BE FOUND IN CONSUMER LITERATURE ON DRUG-FREE SELF-CARE BEHAVIOURS

The types of self-care interventions in any type of consumer-oriented literature would have to meet several criteria:

1. Interventions must pose no material risk to consumers.

2. Consumers should be able to implement the interventions at home, without initial supervision.

3. Interventions must be easy to implement and inexpensive and accessible. The goal is to suggest interventions that everyone, regardless of economic status, or geographical location can try. There is a danger that self-care initiatives will remain outside the domain of the economically disadvantaged or geographically isolated if they require the use of costly or hard-to-obtain remedies. or visits to expensive practitioners.

4. Interventions should have some empirical data backing them up, both to provide rationale for their use to consumers and to satisfy traditional practitioners.

5. Interventions should be simply and clearly outlined. Any ambiguity that could create confusion must be avoided.

6. All interventions should include information on danger signs and symptoms and advise regarding when to call a physician. Any literature should clearly state, preferably in several places, that these interventions are meant only for the short-term of generally healthy adults.

7. Suggested interventions will not include traditional over-the-counter medications. The object of this type of literature is to illustrate options other than drugs and pharmaceutical agents.

SAMPLE INTERVENTIONS FOR CONSUMERS

IMPORTANT

All of the following interventions are meant for short term use only. They are intended for generally healthy adults who are experiencing an occasional, non-acute illness. None should be used for longer than five to seven days. If symptoms do not improve in that time, a physician should be consulted.

COLDS, VIRAL UPPER RESPIRATORY TRACT INFECTIONS:

- increasing fluids, particularly fruit and vegetable juices.

- garlic - either raw or as garlic pills (2 capsules with meals).

- vitamin C - a maximum of 3 grams daily (less if diarrhea develops).

- eliminate dairy products for duration of cold.

- humidified air using eucalyptus or thyme in the steam .

- for sore throat gargle with:
  hot water and salt (not for those on a sodium restricted diet)
  hot water, lemon juice and honey (not for diabetics).

Important Considerations

It is important to emphasize that a cold is a self-limiting illness which generally runs its course in 3 to seven days. Caused by a virus, it will not be helped by antibiotics unless it is also accompanied by an illness such as strep throat, which is caused by a bacteria. These suggestions may help make the cold's symptoms more tolerable; they will not actually "cure" the cold.

In self-treating a cold, it is important to understand that some other illnesses may begin as a cold, or may have symptoms similar to a cold. These symptoms may indicate the need for some sort of medical care.

Seek medical attention with:

* Fever over 39.3 C (101 F) that is accompanied by shaking chills and coughing up thick phlegm (especially if it is greenish or foul smelling).

* Fever over 39.3 C that lasts over five days.

* Sharp chest pain with a deep breath.

* Any fever greater than 39.4 C (103 F).

* Cold-like symptoms that do not improve after seven days.

* Coughing up blood.

* A sore throat accompanied by
    1) Pus (yellowish-white spots) on the tonsils or throat
    2) Fever greater than 38.3 C
    3) Swollen or tender glands
    4) Exposure to someone who has a documented case of "Strep Throat"
    5) A rash that developed during or after a sore throat
    6) A history of rheumatic fever, rheumatic heart disease, kidney disease or chronic lung disease such as emphysema or chronic bronchitis. (Wolfe et al, 1988).

CONSTIPATION

Constipation is a common problem for much of the population. The suggestions provided here can both help prevent constipation before it occurs, and can help treat it if it becomes a problem.

- Be aware of your own bowel pattern before deciding that you are constipated. Some people have several bowel movements a day, while others may only have one every two days. If your stools are soft, and you can pass them without difficulty, you may not be constipated, even if you are not having a bowel movement every day.

- The best way to avoid and treat constipation is through diet. So that it does not become a problem (or to treat ti if it does), it is important to eat a high fibre diet which includes whole grains (such as bran, and whole wheat), nuts and seeds, fruits (fresh and dried) and vegetables.

- fluids are as important as fibre in both preventing and treating constipation. Without fluid, fibre cannot move along the intestines to be expelled and constipation becomes worse. Drink four to eight glasses of fluid daily, unless you also have a health problem (kidney disease, heart disease) which requires you to minimize fluid intake.

- do not drink a lot of tea, which can worsen constipation. Instead, drink water and dilute fruit juices.

- prune juice, and dried or stewed prunes can be very effective in treating constipation.

- avoid or eliminate the use of codeine containing drugs (222, Tylenol 2 and 3, etc.), as codeine can be very constipating.

- exercise for 30 minutes every day. This can include swimming, brisk walking, or cycling.

- increase use of essential fatty acids such as flaxseed oil. Take 1 to 3 tablespoons daily on a regular basis to avoid constipation.

- visit the toilet 20 minutes after each meal to establish a regular bowel reflex habit.

- constipation can be caused by a milk or other food allergy. If the above measures do not work within 1 week have yourself assessed for possible allergies.

- do not get into the habit of taking laxatives of any kind on an ongoing basis. For occasional constipation take one of the bulk-forming agents containing psyllium. Make sure that you drink 4 to 8 glasses of fluid if you take these agents. *Note; Some people have experienced a hypersensitivity to products containing psyllium. Do not take these products again if you have had a problem with them before.

Seek medical attention if you experience:

* blood in your stools.

* severe cramping, nausea and bloating with constipation.

* sharp abdominal pains that feel worse if you step down hard.

* constipation accompanied by weight loss when you are not dieting.

* a sudden and persistent change in your bowel habits for no apparent reason (eg. without a change in diet, no new stress, no new medications).

DIARRHEA

- Chronic diarrhea can be caused by a milk or other food allergy. Try eliminating all dairy products from your diet for a period of one week (supplementing your diet with a calcium supplement) to see it this makes a difference.

- people are often sensitive or allergic to different components of milk and other dairy products. Some people react because they cannot digest the lactose in the milk; they may be helped by using milk with pre-digested lactose, or by taking special enzyme pills which help digest the lactose. Other people cannot digest the protein in dairy products. This is a true "milk allergy" which will not be helped by the "lactose-digesting" products. If you suspect that you might have an allergy to dairy products, try using one of these products for several days to see if it makes a difference.

- coffee can act as a laxative. If you drink a lot of coffeeand often have diarrhea, cut down on your coffee consumption to see if this has any effect.

- for occasional acute episodes of diarrhea - eliminate dairy products for several days. Take only clear fluids for 24 to 72 hours.

- several foods have been found to control acute diarrhea following a 1 to 3 day diet of clear fluids. These include:
  green apples, without the skin
  bananas
  barley water
  yoghurt
  carrot soup carrot and cabbage juice
  blackberry tea or juice
  peppermint tea

Seek medical help when:

* severe diarrhea occurs in an older adult, particularly one who is very weak.

* diarrhea is accompanied by a fever above 38.3 C (101 F).

* there is evidence of blood in the stools or black, tar-like stools.

* diarrhea persists for more than three days.

* diarrhea is accompanied by severe abdominal pain.

* diarrhea accompanied by weight loss when you are not dieting.

* diarrhea results in severe dehydration, characterized by dizziness while standing or confusion.

* a sudden but persistent change in bowel habits for no apparent reason.

HEARTBURN AND INDIGESTION

Occasional heartburn and indigestion are usually caused by the food you have eaten. Although people generally tend to treat these symptoms with antacids, a number of other measures can be just as effective. These include:

- a cup of peppermint herbal tea although this should not be used by people who are also using homeopathic remedies as peppermint may make the homeopathic treatment ineffective).

- chamomile tea (unless you have an allergy to chrysanthemums).

- an awareness of one's posture - slouching and sitting "scrunched over" can often make heartburn worse by increasing pressure in the stomach and allowing food and "stomach juices" to reflux, or move back up into the esophagus.

- avoiding alcohol and cigarettes.

- avoiding caffeine, spicy foods, foods high in fat, or other foods which you find makes symptoms worse.

- do not lie down immediately after eating. Try to remain upright for two to three hours after eating.

- for chronic heartburn elevate the head of the bed so that your head is higher than your stomach when sleeping.

- eat frequent smaller meals.

- lose weight if obese.

- tight fitting clothing increases pressure in the stomach and can cause food in the stomach to reflux, or move back into the esophagus. Avoid tight belts and other restrictive clothing.

- avoid stress at mealtime.

- eat slowly and chew food well.

- drink mineral water which is high in bicarbonate.

Seek medical attention if:

* you suffer from frequent heartburn that does not respond to these measures.

* if you are not certain if this is heartburn; for example if pain seems to radiate down your arm, or seems unusual in any way.

* if a bout of heartburn feels different than it usually does.

MINOR SKIN PROBLEMS

- taking 1 to 2 tablespoons of flaxseed (linseed) oil daily may help improve the general quality of skin and hair.

Burns:

First degree burns, in which the skin is red and painful, but not blistered and weeping may be relieved by:

- egg white on burned area

- aloe vera cream or gel.

- aloe vera and vitamin E cream or gel for sunburn.

Suntan lotion containing PABA can also help soothe a sunburn once it has occurred.

Seek medical attention :

* if you have a first degree burn that covers a large area of the body, or any second or third degree burn.

* if you have a mole or "beauty mark" that changes shape, size or colour.

* if you develop a spot or "beauty mark" that doesn't go away.

* if you have a sore that doesn't seem to heal.

INSOMNIA

People often experience an occasional period when they have difficulty sleeping. These suggestions can help you get to sleep more easily, both when you go to bed, or if you wake up in the middle of the night. Unlike many of the prescription and non-prescription drugs commonly used for insomnia, these suggestions will neither interfere with your regular sleep cycle nor make you groggy or tired upon waking up.

- it is important to be aware of your own normal sleep cycle. Some people need only a few hours of sleep, others need a great deal. Even if you only sleep four or five hours a night, you do not have insomnia if you wake up refreshed, and are not tired throughout the day. If you find this to be the case, or if you find that you only fall asleep after, for example, midnight, do not even go to bed before that time. If you generally spend hours tossing and turning before falling asleep, but then wake up refreshed, you may simply be going to bed too early.

- regular exercise is important to sleeping well. It is important however, to avoid exercise in two to three hours before before bedtime.

- a cup of chamomile tea before bedtime often encourages sleep. (do not use chamomile if you are allergic to chrysanthemums).

- a cup of warm milk at bedtime. Milk contains tryptophan, a substance which helps people sleep. Turkey and bananas contain tryptophan as well.

- cut out all foods and drinks containing caffeine after dinner as caffeine is a stimulant.

- limit alcohol intake, particularly in the evening. Although alcohol my initially make you tired and fall asleep, it often causes people to wake up several hours later and then have difficulty getting back to sleep.

- epsom salt/warm bath at bedtime.

- massage before bedtime often helps relax you enough to get to sleep.

- use of self-hypnosis, progressive relaxation techniques, meditation can help relax you and clear your mind of problems which are keeping you awake.

<u>Seek professional advice if:</u>

* Insomnia persists for several weeks despite trying the above measures. Insomnia can be caused by personal worries or stress often without the person being aware of what is actually bothering him or her. Counselling by a qualified professional can be an effective way of relieving insomnia. Sleeping medications should be used only if the problem is very severe, and then only for a few days. Even then, they should be used in conjunction with counselling and professional supervision.

STRESS

Stress is a very vague term, with many different signs and symptoms. If you feel generally "strung-out" or tense, there are a number of things you can try in order to alleviate these feeling.

- ensure that you are eating a healthy diet with a minimum of processed and "junk" foods.

- exercise regularly. This can include swimming, jogging, cycling, playing a sport, or simply going on a daily brisk walk.

- make sure that you are getting adequate sleep. People who are tired generally feel worse.

- some people find that taking a vitamin B complex daily can help.

- eliminate caffeine, alcohol, cigarettes and drugs.

- yoga, massage, meditation and relaxation techniques can help you to control your stress.

- try to look at what is bothering you and take steps to correct it. Use any resources available to you for support; these may include you friends, your spouse or partner, or community support groups.

Seek professional help if:

* You feel that your level of stress is, or is beginning to become more than you feel that you can handle, or if it is beginning to affect your sleep, your work, or your personal relationships. An important step in relieving stress lies in understanding its cause. Counselling by a qualified professional can be extremely helpful. Learning specific techniques (such as progressive relaxation, yoga, or meditation) can also help to reduce and control stress. Medications should be avoided as much as possible, as they treat symptoms, instead of looking for and working on, the root of the stress.

HEADACHE/NECK PAIN

Headaches, commonly known as tension headaches, are caused by a variety of reasons including stress, strain on the neck muscles, or even a poor sleep position. The following interventions are meant to help this kind of headache. Migraine sufferers should be under medical supervision before embarking on any self-care regime.

- assess the effect of caffeine containing foods, alcohol and sugar. Avoid if they exacerbate symptoms.

- cold compress on back of the neck, or on temples can help alleviate pain.

- heat (eg. heating pad) to back of neck or on temples.

- avoid sleeping on your stomach.

- exercise, eg. to relieve muscle tension in the neck and shoulder areas.

- relaxation techniques for headaches caused by stress or muscle tension.

- meditation, deep breathing, yoga.

- massage on temples, cervical area.

Seek medical attention:

* for any severe headache.

* severe headache with vomiting.

* severe headache which occurs following a fall or a blow to the head.

* a headache which is different from any previously experienced.

* a headache with visual disturbances or one which causes an "exploding feeling" in the head.

* headache associated with a change in behaviour.

* a progressive headache where the pain continually worsens.

BACKACHE

Backaches can be caused by a variety of reasons, including strain, posture problems, or the repeated effects of poor body mechanics when lifting or carrying. Backache can also be the result of chronic degenerative problems or other illnesses. If you know what caused your backache, there are often specific measures which you can take on your own. These include:

- use of proper body mechanics.(as a preventive and curative measure)

- regular exercise appropriate to specific back problem (as suggested by a qualified practitioner).

Seek medical attention

* for an initial assessment if you do not know what caused your backache.

* if you are unsure as to which exercises to do.

* if a bachache becomes worse, or does not get better despite the use of preventive and treatment self-care measures.

AN EXAMINATION OF ACCESS TO PRESCRIPTION DRUGS IN ONTARIO AND AN EVALUATION OF SELECTED COST-SHARING POLICIES

by

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Executive Summary

The Ontario Drug Benefit program (ODB) currently provides drugs free of charge to individuals receiving Family Benefits or General Welfare, all individuals aged 65 or over, and specified other groups of individuals. Recent concern regarding problems of access to prescription drugs by residents of Ontario not covered by the program, as well as concern over escalating ODB program expenditures, have, in part, prompted a re-evaluation of the role of the provincial government in the prescription drug market.

For individuals experiencing problems of access to prescription drugs, the primary cause is a lack of financial resources. The vast majority of Ontario residents have third party coverage that pays a large proportion of the costs of prescription drugs. Most full-time employees receive drug insurance as a fringe benefit of employment, and the plans generally require low levels of cost-sharing. There do not appear to be problems of access for this group of residents. Low-income individuals with incomes just above the eligibility limit for social assistance (Family Benefits or General Welfare) have experienced access problems in the past. Such individuals often do not receive third party coverage at their place of employment and do not have the personal resources to purchase needed drugs. They have "fallen through the cracks" between public coverage and private third party coverage. Finally, persons with disabilities, chronic diseases, and other specific medical conditions are experiencing access problems. Such individuals often do not

qualify for private coverage because of exclusion criteria, do not qualify for ODB unless they impoverish themselves, and often face high drug costs. Even if not widespread, it would appear that certain subgroups of residents face financial barriers to obtaining prescription drugs.

A review of prescription drug programs in other countries and in Canadian provinces/territories revealed considerable variations in program design. In Europe, universal coverage predominates, but all programs require cost-sharing for at least one beneficiary group. The copayment mechanisms vary considerably, and include per-prescription charges, coinsurance rates that vary according to the cost of a drug, and coinsurance rates that vary by drug type (e.g., essential verses non-essential). Within Canada, only four provinces offer universal coverage for prescription drugs; all provinces/territories provide coverage for persons aged 65 or over, and all but the Yukon provide coverage to persons on social assistance. Only four provinces/territories (none of them offering universal coverage) do not require any beneficiary cost-sharing. Two require cost-sharing by persons on social assistance, and the remaining require cost-sharing by non-social assistance recipients, primarily the elderly. All four universal programs require cost-sharing by both elderly and non-elderly (non-social assistance) beneficiaries, so it would appear that provinces are trading breadth of coverage for cost-sharing. The common copayment mechanisms are per-prescription charges, coinsurance rates, deductibles, and annual expenditure caps.

The various mechanisms by which cost-sharing is implemented create quite different incentives for consumers and suppliers. Compared to per-prescription charges, for example, coinsurance rates provide the incentives for the consumer to be cost-conscious with respect to the dimension of the good or service to which the coinsurance rate applies; similarly, suppliers have incentive to compete in that dimension. Differential copayment rates across categories of drugs creates incentives to utilize the drugs with lower levels of cost-sharing, and may create undesirable substitutions among drugs. Although one cannot avoid creating both desirable and undesirable incentives in the design of insurance plans, a well designed plan can reduce the number of unintended, negative side effects.

Policies options relating to the extension of coverage and the introduction of cost-sharing are then evaluated according to their effects on: (1) risk-sharing; (2) wealth transfers; (3) the level and pattern of utilization; and (4) economic efficiency.

Extending coverage to targeted groups experiencing access problems is judged to have only minor effects on risk-sharing and economic efficiency, to lead to what is likely to be judged by society as a desirable wealth transfer, and to have the potential to improve both the level and pattern of drug utilization.

The case for cost-sharing policies is less clear-cut. Like the extension of coverage, cost-sharing is judged to have only minor effects on risk-sharing. When applied only to non-social assistance recipients, it may well create desirable wealth

transfers (depending in part on how the freed resources are used); but cost-sharing imposed on all beneficiaries creates mixed effects: the transfer from social assistance recipients is undesirable. Policies targeted only at beneficiaries with adequate resources are more likely to be associated with desirable wealth transfers. Cost-sharing also has mixed effects on utilization. It reduces the overall level of utilization, which may be desirable in the prescription drug market where allegations of over-utilization are common, but cost-sharing reduces both appropriate and inappropriate utilization. Again, by confining the cost-sharing to those with adequate resources, some of the negative effects can be reduced, but they cannot be eliminated. Finally, cost-sharing has the potential to increase the economic efficiency with which the prescription drug delivery system operates.

A series of simulations of the effect of introducing cost-sharing for the non-GAINS seniors beneficiaries is presented. Two types of copayment policies are simulated: a fixed per-prescription charge and a coinsurance rate applied to the dispensing fee with an annual cap on beneficiary out-of-pocket expenses. The simulations are based on estimates of consumer responsiveness to changes in the level of cost-sharing in the U.K. and the U.S., and sensitivity analysis is performed around the best estimate. The results indicate that cost-sharing has the potential to reduce ODB program expenditures considerably - on the order of 20% to 30% under plausible assumptions. The

simulations were limited to predicting the effects of cost-sharing on the overall level of utilization, and provided no insight into how the reductions are distributed among beneficiaries or types of drugs.

Finally, options relating to the extension of drug coverage and the introduction of cost-sharing are discussed. The lack of access problems amongst most persons with private third party insurance suggests little would be gained by extension of public coverage by, for example, making the program universal. Recent reforms by the Ministry of Community and Social Services whereby low-income individuals whose income exceeds the eligibility limit for social assistance are eligible for ODB benefits if their is within a specified buffer zone, will remove current financial barriers for these persons. It is unclear how many persons this reform will affect, but it is an important positive step for increasing access to prescription drugs for low-income individuals. Hence, before recommending any new policies to address access problems among this group of individuals it would seem prudent to wait to determine the effects of this reform. If problems persist, it may be necessary to adjust the buffer zone accordingly, or develop an alternative policy.

Though anecdotal evidence clearly indicates problems of access among individuals with disabilities and certain chronic diseases, there is little systematic data upon which to evaluate the extent of the problems or upon which to base a policy recommendation. It would appear that persons suffering from

kidney disease and those with diabetes (for whom the insulin is covered but not the syringes) have specific concerns that can be addressed. The anecdotal claims of other groups (e.g., arthritis, cancer, multiple sclerosis) also need to be taken seriously. Secondary data from organizations representing these groups are not adequate for judging the extent of the problem. Therefore, while accepting in principle that coverage be extended to groups whose claims can be substantiated, it may be necessary to collect primary data, though for example, a random sample of persons with the conditions. These data can then be used to evaluate the claims. Establishing a process for evaluating such claims would also be helpful for the future as new drug products are developed for treating disease, and the issue arises again for new disease categories.

If the introduction of cost-sharing is desired, it is recommended that a scheme similar to that recently implemented in British Columbia be considered. The scheme would either exempt those on social assistance (both elderly and non-elderly) (or at least ensure that they are no worse off financially by the change), be based on coinsurance rates, and include annual expenditure caps, which limit out-of-pocket costs for beneficiaries.

The effects of the introduction of cost-sharing will need to be monitored closely, which will require modification to the way in which data are currently collected and stored within the ODB

program. This need is consistent with an earlier recommendation of the Inquiry that data systems must be modified to permit ongoing drug utilization review.

I would like to acknowledge the research assistance provided by Nancy Arbuthnot Johnson, and to thank her for her patience and perseverance. I would also like to thank Ruth Badenhorst for her help in preparing this document.

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I. INTRODUCTION

The Ontario Drug Benefit (ODB) Plan was implemented in 1974 in response to the concern that, because of insufficient personal resources and a lack of adequate private third party insurance, certain segments of the Ontario population were unable to obtain needed prescription drugs. Initially the ODB program paid the full cost of prescription drugs only for individuals receiving Family Benefits and Guaranteed Annual Income Supplement (GAINS); within a year, however, it was expanded to provide the same benefits to all individuals aged 65 or over, residents of Homes for Special Care, persons receiving care in Extended Care Facilities, and persons receiving Home Care. Minor extensions in coverage have occurred since that time, and although there have been continuing controversies over issues such as quantity restrictions, drug pricing, and interchangeability, the basic structure of the program has changed little in the intervening fifteen years. The program remains an integral part of the provincial government's effort to ensure access to needed health services for all residents of Ontario.

By every measure, utilization of prescription drugs under the program has increased steadily since the inception of the ODB plan. During the ten-year period from 1977/78 to 1987/88 the annual number of prescription claims processed increased 126%, from approximately 15 million claims to over 34 million; the annual number of claims per active beneficiary increased 47% from

15.65 to 22.98 (Ontario Ministry of Health, 1989). During the same period, the annual costs of the ODB program increased at an average annual rate of 21.2% in nominal terms, and in real terms (dollars deflated using all-items CPI) expenditures were more than 200% higher in 1987/88 than in 1977/78. Expenditures under the ODB program have risen faster than expenditures on health care services generally, and since 1977/78 the percentage of the Ministry of Health's budget allocated to the program has more than doubled from approximately 2.1% to just under 5%.

This steady, rapid growth in expenditures at a time when there are increasing demands for provincial resources generally, and health resources in particular, has intensified concern regarding program expenditures. Beneficiaries receive all approved drugs free of charge, and there is a perception of widespread over-utilization of drugs, particulary by the elderly. This over-utilization not only results in lower health status through, for example, adverse drug reactions, but also means that valuable program resources are being wasted. Given the rapid rise in expenditures, and the open-ended nature of the funding, the Ministry is seen as having little control over program expenditures.

Alongside this concern about increasing utilization and expenditures within the ODB program, there has been a growing perception that certain subgroups of Ontario residents are having increasing difficulty obtaining prescription drugs, again primarily as a result of financial barriers. Through either the

ODB program or private third party insurance, most often obtained as a fringe benefit of employment, the vast majority of Ontario residents have at least some coverage for prescription drug costs. But certain individuals, such as many low-income working persons, are not eligible for social assistance, do not receive insurance as a fringe benefit of employment, and do not have adequate resources to purchase needed drugs (Social Assistance Review Committee, 1988). Others, such as individuals with disabilities or chronic diseases face drug costs that strain even the budgets of individuals with above average incomes; furthermore, lifetime expenditure limits and exclusion criteria often exclude such individuals from private third party plans. Currently there are little good data on the number of individuals in the province who do not have full access to needed prescription drugs, or on the nature of the problems that impede access.

As part of its mandate, the Pharmaceutical Inquiry of Ontario (PIO) was charged with examining policies for gaining control over program expenditures, and for ensuring that funds allocated to the program are used in the most efficient manner to meet the needs of residents for prescription drugs. The Inquiry commissioned this study in response to the need for evidence regarding the extent to which access problems exist, and the likely utilization and expenditure effects of introducing consumer cost-sharing in the ODB program. A policy of increasing consumer cost-sharing has often been advocated as a means of both decreasing program expenditures, by shifting costs to consumers and reducing the

level of utilization, and decreasing inappropriate utilization.

The three basic objectives of the research, as developed by the Inquiry, were:

1. to estimate access to drugs for residents of Ontario and the percentage of drug costs paid by the consumer;
2. to examine critically alternative schemes for addressing problems of access to pharmaceutical care and the cost of these schemes, and
3. to review critically alterative copayment systems and the impact on access to drugs.

In achieving these objectives the study was to:

(i) review the history of policies governing drugs in Ontario,

(ii) review drug benefit plans in other provinces and industrialized countries,

(iii) develop a comprehensive picture of access to drugs for Ontario residents and identify salient problems and issues for access, and

(iv) define options for the government and specify the implications of alternative policies in terms of coverage and costs.

This report is structured closely around these specific objectives, with the final section outlining options for the Inquiry to consider. As will be discussed in more detail below, data availability (or inavailability) severely restricted the ability to answer certain questions, particularly quantitative estimates of the number of individuals experiencing access problems and estimates of the costs of resolving issues of access. Where this occurred, every attempt was made to obtain the best

data available, and at minimum to delineate qualitatively what groups may be experiencing problems, and what the nature of the problems are.

In order to minimize confusion in reading the report, I would like to clarify how the terms copayment, cost-sharing, deductible, etc. are used in the report. Cost-sharing simply means that the consumer pays some portion of the cost of obtaining a prescription drug. A copayment provision is the specific mechanism through which cost-sharing is implemented. A copayment provision is most commonly composed of either a deductible, a coinsurance rate, a fixed per-prescription charge, an annual expenditure limit, or a combination of these. A coinsurance rate simply refers to a provision whereby the consumer is liable for a specified percentage of the cost of a drug. It can apply to the total cost, the drug cost only, or the dispensing fee only. Requiring the consumer to pay 75% of the dispensing fee, as in British Columbia, is an example of a coinsurance rate. A fixed per-prescription charge simply specifies the dollar amount a consumer must pay for each prescription filled, and is independent of the cost of the prescription. An example is the $2.00 charge to social assistance recipients in Saskatchewan for each prescription. A deductible is a dollar amount below which a consumer bears the full cost of drug purchases; for expenditures beyond that amount the consumer may still be liable for some portion of the cost of additional drugs. The Manitoba program provides an example: a family must pay the full cost of drugs until expenditures have reached $156.15. For

drugs purchased after this amount has been reached, a coinsurance rate of 20% applies. Finally, an annual expenditure limit specifies the maximum out-of-pocket expenditures for a consumer (or family). Once the limit is reached, additional drugs can be obtained free of charge. Once again British Columbia provides an example: the elderly must pay 75% of the dispensing fee up to a maximum yearly expenditure of $125.00; once the limit is reached additional drugs are free. This distinction between these different copayment mechanisms is important because the different mechanisms create different economic incentives for consumers and suppliers.

II. PUBLICLY-FUNDED PRESCRIPTION DRUG COVERAGE IN ONTARIO

As noted above, the Ontario Drug Benefit program was introduced in 1974, and has changed little except for the addition of several beneficiary groups. Prior to its inception, however, there were a number of provincial initiatives to increase access to prescription drugs for Ontario residents. A summary of some of the important events in the history of public drug coverage in Ontario is provided in Table 1; a listing of some of the important federal initiatives targeted at the pharmaceutical industry over the same period is provided in Table 2.

A. Early Public Initiatives to Increase Access to Prescription Drugs

Publicly-funded reimbursement for prescription drugs in Ontario began with the Hospital Insurance and Diagnostic Act of 1957. Under this Act, which specified that the hospital program be funded jointly by the federal and provincial governments, ninety percent of the costs of drugs to inpatients in Ontario hospitals were covered.

The first publicly-funded provincial outpatient coverage for prescription drugs was provided though two municipal assistance programs established in 1962. Under the General Welfare Special Assistance and the Family Benefits Supplementary Assistance programs, low-income individuals who qualified for General Welfare or Family Benefits could receive prescription drugs on an

Table 1: Key Dates in the History of Public Drug Coverage for Ontario Residents

Date	Event	Comments
1957	Hospital Insurance and Diagnostic Services Act implemented	Act covered 90% of the cost of drugs to inpatients in Ontario hospitals
1962	Municipal "Special Assistance" and "Supplementary Assistance" programs became operational	Programs provided prescription drugs on an assisted basis to Welfare and Family Benefits recipients
1964	Hall Commission Report released	Report prompted initial discussions of a publicly-funded prescription drug program for Ontario residents
1972-73	Efficacy of Municipal programs called into question	This led to a reconsideration of a free prescription drug program
1974	Ontario Drug Benefit Plan introduced	Plan provided free drugs to Guaranteed Annual Income Supplement recipients and persons receiving Family Benefits
1975-76	Ontario Drug Benefit Plan coverage extended	All residents 65+, Special Care and Home Care patients, residents of Extended Care facilities, and General Welfare recipients now also received free drugs
1986	Bills 54 and 55	Established legislative authority for Ontario Drug Benefit Plan

Table 1: Key Dates in the History of Public Drug Coverage for Ontario Residents, cont'd

1988	Public drug coverage extended to cystic fibrosis and thalassemia patients	Cystic fibrosis and thalassemia patients receive free drugs at the hospital clinics
1989	Special Authorizations List reduced	Cost of 1,400 out of 1,600 drugs on Special Authorization list no longer covered by Ontario Drug Benefit Plan

Table 2: Federal Government Initiatives Directed at the Pharmaceutical Industry

Date	Initiative	Objective
1967	Dropped 12% sales tax at manufacturer's level and reduced the tariff on imported prescription drugs from 20 to 15%	
1969	Amended Patent Act to allow compulsory licenses to import the active ingredients in pharmaceutical products	To promote the growth of a generic manufacturing sector in Canada which would offer competitive equivalents of many drug products
1970	Introduced the Pharmaceutical Industry Development Assistance (PIDA) program. This was a direct loan program primarily for Canadian companies	To improve the ability of Canadian companies to manufacture and market lower-priced prescription drugs at competitive prices
1971	Established the Drug Quality Assurance Program (QUAD)	To provide information to health care professionals about the relative prices and quality of available drug products
1987	Amendments to Patent Act	To give developers of new brand-name drugs 10 years of market exclusivity in return for commitments to spend up to $1.4 billion on new research and development projects

Source: Adapted from: Segal, H.J. 1974. "Ontario's Parcost Program." Canadian Pharmaceutical Journal. Vol. 107:346-351.

assisted basis. These programs were designed to address what was perceived as the most severe access problem of the time. Funding for the two programs was shared between the provincial government and the municipal governments but they were administered at the municipal level. These programs were later judged to be ineffective (though they continue in modified forms today). Largely because of the requirement for joint municipal funding, many municipalities simply did not develop the programs, particularly in rural areas.

Consideration of a publicly-funded, universal prescription drug program for all Ontario residents was prompted by the Hall Commission Report of 1964. The Report recommended that the Federal Government provide grants to assist the provinces and territories in introducing and operating comprehensive, universal provincial/territorial health insurance programs covering medical, dental, optical, and prescription drug services. At the time of the release of the Hall Report the government of Ontario was in the process of implementing a medical services insurance program. It was thus proposed that a publicly-funded drug program providing prescription drugs free of charge to all residents of the province also be established. It is not clear how seriously the proposal was considered, but in the end, it was rejected. Projected costs and a perceived lack of need appear to have been responsible for the decision.

Based on figures submitted by the Ontario Pharmacists' Association, it was calculated that full prescription drug

coverage would cost $20 per person or approximately $120 million to implement (Legislature of Ontario Debates, 1964). This cost, almost equal to that for the proposed medical services insurance program, was one that the Province was unwilling to pay. Furthermore, existing coverage was felt to be adequate: ninety percent of the cost of drugs to inpatients in Ontario hospitals were covered under the Hospital Insurance and Diagnostic Services Act; nearly two million people or approximately one-third of the population, had private third party coverage for extended health care benefits including drugs (Hall, 1964); and more importantly, those individuals with the greatest financial barrier to obtaining drugs (i.e., Welfare and Family Benefits recipients) received them on an assisted basis through the two recently established municipal programs.

Although a publicly-funded universal prescription drug plan was rejected, concern regarding access to prescription drugs continued. Much of the Ministry of Health's effort to improve access in the ensuing years focused on reducing prescription drug prices. Between 1966 and 1974 the provincial government undertook two major initiatives to reduce or control the prices of prescription drugs. The first was the Prescriptions at a Reasonable Cost (PARCOST) program; the second was the 1972 amendments to the Pharmaceutical Act, which were designed to encourage generic competition.

The first step in the development of PARCOST took place in 1966 when representatives of the Ministry of Health and the

Ontario Pharmacists' Association met to discuss the concept of negotiated prices. The key feature of the PARCOST program was the Comparative Drug Index (CDI). The CDI consisted of a listing of drugs that the committee on Quality and Therapeutics Product Testing and Evaluation (established in 1968) determined to be of high quality, and their prices, which were established in negotiation between the drug manufacturers and the Ministry of Health. Under the Program, participating pharmacies were obliged to charge customers no more than the drug cost listed in the CDI plus the PARCOST dispensing fee negotiated between the Ontario Pharmacists' Association and the Ministry of Health[1].

During the same period the federal government acted to encourage price competition in the retail drug market by promoting the growth of a generic manufacturing sector. In 1969, the Patent Act was amended to allow compulsory licensing for the importation of the active ingredients in pharmaceutical products. These amendments to the Patent Act significantly increased the scope for producing low-cost generic substitutes in Canada.

Following this Federal action, in July 1972, the Province passed Bill 144, an Act to Amend the Pharmaceutical Act. This legislation was enacted to encourage the prescribing and dispensing of lower-cost drug products brought on the market by generic manufacturers. The legislation permitted pharmacists, unless directed otherwise by the prescribing physician, to select

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[1] Fifty-nine percent of pharmacies had signed PARCOST contracts with the Ministry of Health as of January 1973 (Ontario Council of Health, 1973).

and dispense a lower-cost comparable drug product, provided it was listed as interchangeable in the PARCOST CDI. The substitution of the lower-cost generic, however, was voluntary.

Both the provincial and federal initiatives appear to have met with some success. In a 1973 report to the Ontario Council of Health, the Task Force on PARCOST Review observed that "the PARCOST program itself can reasonably claim to have contributed significantly to saving the public of Ontario more than $5,000,000 in 1972." (Ontario Council of Health, 1973; p.11). The Task Force also noted that since the introduction of the PARCOST program prescription prices in Ontario had decreased relative to the prices of other consumer goods.

Despite the success of these efforts, it became apparent that some individuals were not receiving necessary drugs because of an inability to pay. It was argued that the two municipal programs that provided drugs to indigent persons on an assisted basis were poorly designed and were not meeting the needs of the low-income population. The programs required municipal funding, and in many cases recipients were refused assistance because the municipalities were unwilling or unable to pay (e.g., Legislature of Ontario Debates, 1969). Therefore, access to drugs through these programs varied considerably across municipalities in the province, and was particularly a problem outside the large urban areas. In light of this fact, consideration was again given to a publicly-funded prescription drug program.

B. Ontario Drug Benefit Plan

In May 1974, the Ontario Government announced the creation of the Ontario Drug Benefit Plan. The program, which became operational in September of that year, provided free drugs to Guaranteed Annual Income Supplement (GAINS) recipients and recipients of the Ministry of Community and Social Services provincial or municipal assistance (i.e., Family Benefits). Under the terms of the Participation Agreement that governed the program's operation, all drugs listed in the Drug Benefit Formulary qualified as benefits. Pharmacies entering into the Agreement with the Ministry of Health were reimbursed the lesser of the pharmacy's "usual and customary fee" charged to the general public and the lowest price listed in the Formulary for the drug dispensed, plus the negotiated dispensing fee. Prices listed in the Formulary, like those in the PARCOST CDI, were set in negotiation with drug manufacturers[2]. Finally, the quantity of a drug product program beneficiaries could obtain on a prescription was restricted to a one-month or 34-day supply.

Within a year of its implementation, in addition to providing prescription drugs free of charge to recipients of GAINS and Family Benefits, coverage under the ODB program was extended to all persons aged 65 or over, residents of Homes for Special Care and Extended Care facilities, Home Care patients, and recipients

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[2] In 1975, because the Formulary and the CDI served essentially the same purpose, they were combined.

of General Welfare assistance.

The ODB program was implemented without any legislative action: it was simply a program established by the Ministry of Health under its mandate. Legislative authority for the program was not established until 1986 with the passage of Bills 54 and 55, the Ontario Drug Benefit Act and the Prescription Drug Cost Regulation Act. Both of these Bills were the outcome of a prolonged controversy surrounding repeat dispensing fees and a practice known as price spreading.

1. Quantity Restrictions and Repeat Dispensing Fees

From virtually the outset of the Drug Benefit program, concerns have been raised about program expenditures. In part, these concerns have centred on quantity restrictions and repeat dispensing fees.

Two justifications were initially put forth for the 34-day dispensing rule. First, eligibility for the Drug Benefit program was determined on a monthly basis, and was contingent upon receiving either GAINS or Family Benefits. Therefore, administratively, it was easier to limit the quantity that could be dispensed at any one time to a one-month supply. Second, limiting the dispensing of maintenance drugs (for which the prescription is often for a 3-, 6-, or 9-month course of treatment) to one month was thought to improve the monitoring of patient compliance and to reduce drug diversion, poisoning, and

overdose. But the rule also provided a substantial economic bonus for pharmacists, who were able to collect more dispensing fees per prescription than they could have under a "dispense-as-written" rule.

In October 1976 it was proposed that the Ministry of Health could substantially reduce the costs of operating the program by eliminating the 34-day supply limit on maintenance drugs, which constitute approximately 70% of all Drug Benefit claims. By this time coverage had been extended to all seniors, who are the heaviest users of these drugs, and eligibility was not determined on a monthly basis for this group of beneficiaries. As a consequence, the administrative advantage of the rule was largely lost. It was also obvious that the 34-day dispensing rule, and the associated repeat dispensing fees greatly increased the cost of providing drugs. For example, at that time a cash-paying customer could obtain 100 tablets of hydrochlorothiazide on a single visit to the pharmacy at a cost of $3.31. Under the Drug Benefit program the same 100 tablets of hydrochlorothiazide cost the Province $28.20 (9 tablets/month @ $2.35 X 11 months) (Legislature of Ontario Debates, 1976).

No action was taken by the Ministry of Health for a number of years despite much debate in the Legislative Assembly and the recommendations of an April 1978 report by the Ontario Drug Benefit Formulary Pricing Committee and of the Provincial Auditor's Report for 1978-79. It was not until 1980, when the Ontario Pharmacists' Association, the Ontario Medical Association,

and the Ministry of Health tentatively agreed on a compromise position allowing the physician to indicate on the prescription that the quantity prescribed is not to be altered, that some headway was made.

But soon after this tentative agreement was reached, attention shifted from quantity restrictions and repeat dispensing fees to the widening difference between Formulary prices and the actual prices pharmacies paid for drugs. Therefore, government action with regard to repeat dispensing fees was not forthcoming until 1986 when Bill 54 was passed. Under this legislation, program beneficiaries other than General Welfare recipients (who still qualify for program eligibility on a monthly basis) can now receive a quantity of drugs sufficient for a 250-day course of treatment on a single visit to the pharmacy. Moreover, pharmacists can only charge one dispensing fee for quantities that do not exceed 100 days; for quantities that exceed 100, but not 250 days, the pharmacist is allowed to charge an additional one-third of one dispensing fee per 50-day course of treatment up to a maximum of two dispensing fees. Thus, whereas in the past a pharmacist could charge up to eight dispensing fees per 250-day course of treatment, he/she is now only able to charge two.

2. Price Spreading

Soon after the Drug Benefit program was introduced, it became apparent that for certain multiple-source drugs there was a

considerable difference between the price listed in the Formulary and the price actually charged to pharmacies. Drug manufacturers were competing on this difference, or spread, between the prices listed in the Formulary and the prices charged the pharmacy. This was accomplished largely by submitting inflated prices for publication in the Formulary. For these multiple-source drugs, pharmacists, rather than the Province or cash-paying customers, were the main beneficiaries of competition amongst the drug manufacturers. Moveover, the practice led to higher- rather than lower-priced pharmaceutical products for consumers.

In 1978, the Ministry commissioned the Ontario Drug Benefit Formulary Pricing Committee (Bailey Committee) to investigate price spreading. The committee recommended that the package size that was the negotiated basis between the Ontario Pharmacists' Association and the Ministry of Health for pricing drugs be increased to be more representative of what was actually being sold in the market place. The recommendation was adopted in 1979, but it failed to resolve the problem. Between 1982 and 1984, there was an acceleration in the growth of the price spread, both in terms of the size of the spread and in the number of drugs with a price spread. Estimates indicated that the excess costs to the Drug Benefit program incurred as a result of price spreading rose from hundreds of thousands of dollars per year to $14.5 million per year (Ontario Provincial Auditor, 1985).

In a renewed effort to resolve the problem the Ministry established the Gordon Commission to investigate how Formulary

prices for multiple-source drug products should be determined. The Ministry also negotiated price reductions for 30 high-volume multiple source drugs with the Ontario Pharmacists' Association and senior representatives of the pharmaceutical industry. At the same time that the price reductions were negotiated, however, there was an increase in the dispensing fee paid to pharmacists, which negated more than half of the cost savings expected from the reduced prices. Although these actions represented progress, the 1985 Provincial Auditor's report argued that there was room for a further reduction in the prices of the drugs. A comparison of the Saskatchewan and Ontario Formularies for February 1984 revealed that, out of 29 of the aforementioned 30 drugs, 25 were priced higher in Ontario, and six were priced more than 70% higher (Ontario Provincial Auditor, 1985).

In its final report the Gordon Commission recommended that prices listed in the Formulary be no more than 20% higher than the best volume price available from the manufacturer for the package size listed (Gordon, 1984). This recommendation was adopted in Bills 54 and 55. Specifically, these Acts define the Formulary list price as the Best Available Price (BAP), where BAP means "the lowest amount calculated per gram, millilitre, tablet, or capsule, or other appropriate unit for which a listed drug product of that drug in that dosage form and strength can be purchased in Canada for wholesale or retail sale in Ontario." In calculating this amount, the value of any price reduction granted by the manufacturer or wholesaler or their representatives in the form of

rebates, discounts, refunds, free goods, or any other benefits of a like nature, is deducted. Under this new legislation the Ministry reimburses pharmacies, in addition to the dispensing fee, BAP plus a markup (currently 10%) or the actual acquisition cost to the pharmacist if it is greater than the BAP plus the markup. The latter is to protect small independent pharmacies, particularly those in rural or remote areas, that cannot take advantage of bulk purchasing and often have to buy through wholesalers.

The Gordon Commission also noted "a growing tendency for pharmacy reimbursement to be viewed as a total revenue package which must be maintained at a certain level, rather than as being composed of two separate elements -- drug cost and dispensing fee." (Gordon, 1984; p. 81) The Report recommended that emphasis be placed on the specific purpose of the dispensing fee and that the fee be clearly separated from drug cost reimbursement in future fee or price negotiations.

3. Current Issues

The Ontario Benefit Act and the Prescription Drug Cost Act (Bills 54 and 55), which were passed in 1986, finally established the legislative authority for the ODB program, and, at least to a greater extent than previous efforts, resolved the controversies over quantity restrictions and drug pricing. But controversy surrounding increases in ODB program costs continues. Reports of

over-prescribing and abuse within the ODB program, new concerns regarding problems of access to prescription drugs for certain segments of the population, unintended effects of the 1986 legislation on the wholesale distribution sector and a number of other issues surrounding the government's involvement in the prescription drug market led to the establishment of the Pharmaceutical Inquiry of Ontario in 1988. The Inquiry received a broad mandate from the Minister of Health to "undertake an inquiry into all aspects of the government's role and influence in the prescription drug marketplace... [to] examine issues with respect to acquisition, distribution, dispensing and prescribing in government-funded drug programs" (Pharmaceutical Inquiry of Ontario, 1988a; p. 3). The Inquiry committee is to develop options and recommendations "for the continuance, modification or restructuring of government-funded drug programs" (Pharmaceutical Inquiry of Ontario, 1988a; p. 3).

III. ACCESS TO PRESCRIPTION DRUGS BY ONTARIO RESIDENTS

For an individual to have access to a good requires not only that the good be available, but also that the individual have the resources needed to purchase it. Both conditions must be present for full access. Though there may be general agreement at this conceptual level as to the meaning of access, by its nature it is difficult to measure empirically; it is probably more common to measure barriers to access than to measure access itself. Barriers to access can be physical (i.e., the good is not available in one's community or an individual does not have the mobility required to obtain the good), financial (i.e., one does not have the ability to pay), or both.

For most residents of Ontario, if a barrier to obtaining prescription drugs exists it is financial, and is linked to the direct costs of obtaining drugs. Because the Ontario Health Insurance Plan (OHIP) covers the full cost of a physician visit, there is no financial barrier to obtaining the requisite prescription from a physician. For individuals living in remote areas, or individuals with mobility problems, a physical barrier to obtaining either a prescription or the drugs themselves may exist, but this is the case for only a small proportion of the population. Special provisions may be required to overcome the physical barriers for these individuals. But the vast majority of residents live where both physician and pharmacies are available, and the barrier, if it exists, is the cost of purchasing the drug.

Financial barriers are present when the resources required to purchase needed drugs outstrip the resources an individual has available. Because of variation in the depth and breadth of coverage contained in third party plans, the presence of insurance does not imply an absence of financial barriers. Similarly, the absence of third party coverage does not necessarily imply access problems - those without coverage may have high enough incomes, or enough wealth, to readily purchase needed drugs. And, to complicate matters further, a large amount of personal resources does not in and of itself imply the absence of a financial barrier: persons with extraordinary drug costs may have difficulty obtaining needed drugs even if they have third party coverage or above average wealth. All of these facts illustrate why measuring access is so difficult. Other things equal, higher levels of coverage or higher levels of wealth, on average, lead to fewer access problems; but to truly measure access requires comparing the distribution of drug needs with the distribution of resources (including third party coverage) to identify segments of the population for which needs exceed resources. The data required for this task, however, are not available.

Therefore, the most common crude aggregate measure of access is the proportion of the population with some form of third party insurance, either private or public, for prescription drugs. Putting aside for the moment the problems of differing levels of coverage contained in various third party plans, for an <u>average</u>

person the presence of insurance implies financial access is not likely to be a serious issue. Such an estimate may serve as an approximate measure of the number of people who have adequate resources to obtain needed drugs.

A refinement would be to examine not only the extent of third party drug coverage, but relate the breadth and depth of the coverage to socio-economic characteristics of individuals covered by the insurance. The type and quality of data available at this time, however, do not permit even this. In fact, as will be seen below, currently available data permit only the crudest estimates of the extent to which there are access problems for prescription drugs. Though the commonly quoted figure for the percentage of residents with no third party drug coverage is 12-18% (e.g., Green Shield, 1988a), these estimates are not based on solid data. Therefore, one cannot even be confident of the percentage of the population with some form of coverage, however minimal, much less how the coverage is distributed amongst the population.

Two basic approaches were taken in this study to assess the access of Ontario residents to prescription drugs. The first examined third party coverage, and included analysis of the plans offered by Green Shield Prepaid Services Ltd. and Blue Cross of Ontario (the two largest providers of third party prescription insurance) as well as an attempt to quantify the proportion of the population with third party coverage. The second attempted to identify specific subgroups of the population that are

experiencing access problems. Where it was not possible to provide quantitative estimates of the number of individuals affected, or the costs of drugs for these individuals, an attempt was made to qualitatively describe the sources of the access problems.

A. Third Party Coverage

At the one end of the spectrum are those individuals who can obtain all prescription drugs (and some OTCs) free of charge; at the other end are those individuals who can obtain all drugs free of charge in an inpatient setting, but who must pay the full cost of all drugs obtained out-of-hospital. It is important to recall that all residents of Ontario can obtain prescription drugs free of charge when an inpatient.

Beneficiaries of the ODB program have complete third party coverage and no financial barrier to obtaining drugs should exist. Beneficiaries receive all drugs listed in the Formulary free of charge. The only instances in which a barrier may exist is in the purchase of prescription drugs not listed in the Formulary. Because the ODB program covers the heaviest drug users - the elderly - the program is the single largest source of drug reimbursement in the province. In 1988, though beneficiaries of the ODB program constituted only 15-20% of the population of Ontario, it provided reimbursement for approximately 43% - 45% of all prescription claims (Ontario Pharmacists' Association, 1989a).

Therefore, for almost one-half of all prescriptions filled in pharmacies in Ontario, the purchaser faced no financial barrier.

The next largest group of individuals is those with some form of private third party insurance for prescription drugs. For most individuals in this category, the insurance is obtained as a benefit of employment. (Less than 1% of Green Shield's subscribers, for example, are covered through policies purchased as individuals (Green Shield, 1989)). Among insurance policies, the depth of coverage, as measured by the degree of consumer cost-sharing through per-prescription charges, deductibles, and coinsurance provisions and through lifetime or annual limits on payments by the insurer can vary considerably; so too does the breadth of coverage, measured by the number and type of items for which reimbursement is paid. Therefore, financial barriers may be present among individuals with such coverage.

The two largest providers of private third party coverage in the province are Green Shield Prepaid Services Ltd. and Blue Cross of Ontario. To gain insight into the coverage offered by third party plans, these two organizations were approached for data on the plans they offer, the level of beneficiary cost-sharing, the number of beneficiaries covered through their plans, and on characteristics of the beneficiary groups.

1. Green Shield Prepaid Services Ltd. and Blue Cross of Ontario

Both Green Shield and Blue Cross agreed to provide data for

this research, though in the end, limitations on what each was able to provide precluded the type of analysis proposed. Both provided information on the basic plans offered to employee groups, but neither was able to provide information on cost-sharing except for an overall average rate. Green Shield further provided detailed information on the number of beneficiaries, utilization levels, and expenditures for each of its over 1,000 subscriber groups, but with no copayment information it was impossible to relate the level of cost-sharing to group characteristics, e.g., average industrial wage in the sector. Blue Cross was able to provide only aggregate information on number of beneficiaries, utilization and expenditures.

a. Benefits

Both Green Shield and Blue Cross offer a number of plans from which groups can choose. Blue Cross has three basic plans (see Table 3), and under the most restrictive plan, "all drugs that require a medical doctor's prescription to receive them in Ontario and are listed in the Ontario Blue Cross Formulary (Ontario Schedules E, F, G, and N)" are reimbursed. The next most generous plan covers all items above plus drugs considered to be life sustaining, e.g., for heart disease, Parkinsons disease, Cystic Fibrosis, Tuberculosis, etc. Finally, the most generous plan covers all of the above, plus specified over-the-counter drugs.

Table 3: Description of Blue Cross Formularies

ONE

All drugs that require a medical doctor's prescription to receive them in Ontario and are listed in the Ontario Blue Cross Formulary and Ontario Schedules E, F, G, & N.

THREE

All items in Formulary One

Plus:

Drugs in the following categories considered "Life Sustaining" i.e., Heart disease, Parkinsons disease, Cystic Fibrosis, Tuberculosis, etc.
- Anti Anginal agents
- Anti Cholinergic
- Anti Parkinsonian agents
- Anti Arrhythmic Therapy
- Bronchodilator
- Anzymatic Zonulolytic
- Fluoride
- Hypercholesterolemia Therapy
- Hyperthyroidism
- Oral Fibrinolytic
- Parasympathomimetic
- Potassium Replacement Therapy
- T.B. Therapy
- Topical Enzymatic Debriding agents

TWO

All items in Formulary Three

Plus:

Drugs in the following categories considered over-the-counter drugs.
- Analgesic
- Anemia Therapy
- Anesthetic
- Anorectal
- Antacid
- Anthelmintic
- Antibacterial
- Antibiotic
- Antidiarrheal
- Antiemetic
- Antiflatulent
- Antifungal
- Antihistaminic
- Antimalarial
- Antiparasitic
- Antiphlogistic
- Antipruritics
- Antipsoriatic
- Antipyretic
- Antiseborrheic
- Antispasmodic
- Antitussive
- Calcium preparations
- Dandruff Therapy
- Decongestants
- Hematinic
- Hemorrhoidal Therapy
- Keratolytic & Keratoplastics
- Laxatives
- Muscle Relaxants
- Oral Sclerosing Agents
- Oxyuriasis Therapy
- Pediculicide
- Rubefacient
- Scabicides
- Wart Therapy

Green Shield offers a total of ten plans, though over 90% of all subscribers are enrolled in either plan 3 or plan 7 (see Table 4). Most of the differences among plans pertain to which, if any, over-the-counter medicines and supplies are covered. The basic plan covers all prescription drugs listed in the Green Shield pharmaceutical directory, and those covered in Ontario Schedules C, E, F, and G of the Health Disciplines Act.

It would appear then, that for both Green Shield and Blue Cross, basic prescription drugs are covered under all plans, and that the more generous plans cover special drugs or disease categories and many over-the-counter medications.

b. Cost-Sharing

Neither plan was able to provide detailed information on the level of cost-sharing required by subscribers[3]. Each group of subscribers sets its own level and type of copayment. Based on the aggregate data provided by Blue Cross for the calendar year 1988, the average cost per prescription was $23.13, of which, on average, the beneficiary paid $1.59 (7%). On average, during the year a subscriber paid a total of $18.91 for prescription drugs. Among the subscribers to Green Shield's prescription drug plans (i.e., excluding those with extended health benefits), the overall average level of cost-sharing was 49.5 cents per prescription.

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[3] A subscriber is the individual through which the coverage is obtained, i.e., the employee. Dependents of the subscriber are usually also covered.

Table 4: Comparative Summary of Green Shield Drug Plans

Exclusions*

Item	Plan									
	2	3	6	7	8	9	H	N	O	V
Insulin, insulin syringes & needles, diabetic testing agents and all injectibles										
Compounded medications regardless of active ingredients	x	x	x	x	x	x	x	x		
Vitamins (except when injected)	x	x	x	x	x	x	x	x	x	
Blood and blood plasma	x	x	x	x	x	x	x	x	x	
Medical supplies such as dressings, cotton swabs, ostomy supplies etc.	x	x	x	x	x	x	x	x	x	x
Dietary supplements	x	x	x	x	x	x	x	x	x	x
Biological sera, vaccines, injectibles	x	x	x	x	x	x	x	x	x	
All contraceptives	x				x					
Contraceptives other than oral contraceptives		x	x	x			x	x	x	
No contraceptives						x				x
Non-Rx shampoos and laxatives	x	x			x	x	x	x		
Non-Rx cosmetics	x	x	x	x	x	x	x	x		
Non-Rx antacids					x	x	x			
Atomizers, inhalators, appliances, prosthetic devices & first aid supplies					x	x				
Some specified single entity pharmaceuticals									x	
Any pharmaceuticals containing certain specified drugs									x	

* x indicates item is excluded.

The per-prescription charges varied from $0.00 to $5.00. Obviously many subscribers face low levels of cost-sharing.

c. Subscribers

In 1988 Blue Cross provided coverage to 347,218 subscribers and a total of 1,029,975 individuals (subscribers and their dependents). In 1987 Green Shield had 198,363 subscribers and provided coverage to 460,177 individuals. But because many individuals have double coverage (such as when both husband and wife are employed) one cannot conclude that together these two organizations provide coverage to 1.49 million persons. There is no information upon which to base an estimate of how many distinct persons are covered by the plans.

Green Shield also released utilization and expenditure data (with confidentiality maintained) on the groups to which it provides coverage. Its subscriber groups reflect its base in Windsor - subscribers employed in manufacturing industries make up 83% of all Green Shields subscribers, and 67% are employed in industries classified as "motor vehicles, parts, and accessories". In fact, Green Shield provides coverage to 85% of all persons employed in firms classified in the SIC code "motor vehicles, parts and accessories" (Green Shield, 1988b). In general, then, those covered by Green Shield work in unionized settings and earn well above the average weekly wage for all sectors of the economy. After manufacturing, the next two largest sectors, as a proportion

of all Green Shield subscribers, are Local (Government) Administration (3.2%) and Education and Related Services (1.58%). The trade sector (either retail or wholesale) makes up less than 0.5% of subscribers.

In summary, few new insights have been provided by the data provided by Green Shield and Blue Cross. There does not appear to be a great deal of variation in the prescription drugs covered by the various plans, and even the most restrictive plans cover basic prescription drugs. Those requiring special drugs probably face difficulties, but common drugs are included. Though the overall average rates of cost-sharing are helpful, and do not indicate a large degree of cost-sharing overall, without information on the range of copayment levels and the distribution of subscribers among the various levels, it is impossible to determine if subgroups of subscribers may be experiencing access problems. Finally, the Green Shield data suggest that the majority of those employed in unionized manufacturing settings have coverage. But the data provide few insights into other sectors of the economy. In particular, one cannot conclude that because Green Shield has so little involvement in the retail sector, for example, that only a small proportion of employees in this sector have third party drug coverage. Other organizations may provide insurance in these sectors.

2. Other Third Party Coverage

Approximately sixty percent of private third party drug insurance in Ontario is provided by organizations other than Blue Cross or Green Shield. A total of 139 insurance companies provided health benefits in Ontario, and they paid benefits of approximately 356 million dollars in 1987 (Canadian Life and Health Insurance Association, 1988). The Canadian Life and Health Insurance Association conducts an annual national survey of life and health insurance companies and produces provincial-specific data. Unfortunately, because most drug benefits are provided as part of extended health plans, drug-specific data are not available. Attempts to use the survey to estimate the number of individuals covered by private third party plans have been plagued by the double counting of individuals receiving benefits under two plans, resulting in estimates that exceeded the population of Ontario (Ontario Pharmacists's Association, 1989b). Data needed to assess the extent of prescription drug coverage are not compiled and available.

In an attempt to identify the degree to which drug benefits are included as a fringe benefit of employment, 36 of the larger trade unions, and trade and professional organizations were contacted regarding fringe benefits offered to members (in the case of trade unions) or to employees of members (in the case of trade and professional organizations). The organizations represented a cross-section of the economy in Ontario (see Table 5).

Table 5: List of Organizations Contacted in Access Survey

The Canadian Manufacturers' Association - Ontario Division
Ontario Federation of Agriculture
Ontario Food Processors Association
Ontario Cattlemen's Association
Ontario Federation of Labour
Ontario Municipal Personnel Association
Ontario Pharmacists' Association
Ontario Museum Association
Ontario Medical Association
Ontario Mining Association
Ontario Library Association
Ontario Hydro Employees Union
Ontario Forestry Association
Ontario Fruit and Vegetable Growers' Association
Ontario Dental Association
Ontario Association of Optometrists
Ontario Association of Speech-Language Pathologists
Ontario Association of Professional Social Workers
Ontario Provincial Police Association
Ontario Public Service Employees Union
Ontario Teachers' Federation
Ontario Real Estate Association
Ontario Retail Merchants Association of Canada
Ontario Restaurant Association
Ontario Nurses Association
The Canadian Conference of Teamsters
Canadian Brotherhood of Railway, Transport & General Workers
Retail, Wholesale and Department Store Union
The Canadian Bar Association
The Association of Professional Engineers of the Province of Ontario
Ontario Council of Hospital Unions
The Institute of Chartered Accountants of Ontario
The Society of Management Accountants of Ontario
Ontario Association of Certified Engineering Technicians and Technologists
Ontario Community Newspaper Association
Union of Canadian Transport Employees

Most union organizations (even some of the larger ones, such as the Ontario Federation of Labour) do not collect data on prescription drug plans or the extended health care benefits of individuals members. Nor do most trade or professional organizations collect such information on fringe benefits offered by corporate members to their employees. But a number of interesting findings did emerge:

- All municipal employees in Ontario have some type of drug coverage. The comprehensiveness of the plan and the copayment level varies with each municipality.

- All provincial and federal government employees have drug coverage. Members of Canadian Union of Public Employees (CUPE) pay a 20% coinsurance rate on the cost of each prescription.

- Most (no specific point estimate of the percentage is available) unionized employees have drug coverage. Ontario Hydro Employees Union, Ontario Teachers Federation, Canadian Conference of Teamsters, Canadian Brotherhood of Railway, Transport and General Workers, and the Retail, Wholesale, and Department Store Union report that all or almost all their members have some type of drug coverage. Again, comprehensiveness and cost-sharing provisions vary and detailed information is not available.

- Approximately one-quarter of the 21,000 members of the Ontario Federation of Agriculture (OFA have drug coverage through a plan promoted by the OFA). The plan deductible is $50.00/individual/year or $100.00/family/year.

- According to estimates derived form the 1988-89 Survey of Wages and Working Conditions For Hourly-Paid Employees, conducted by the Canadian Manufacturing Association (CMA), 96% of hourly-employees in manufacturing industries in Ontario have drug coverage. One must be cautious about placing too much confidence in this point estimate, however, as the survey had a response rate of only 22%. Nonetheless, they are the only data available. More detailed information regarding the degree of cost-sharing and the distribution of sizes of the firms offering plans is provided in Table 6. Among the plans offered by the 363 firms that provide drug coverage as a benefit of employment, more than 80% require no consumer cost-sharing. Though the smallest firms are least likely to offer a drug benefit plan, even in this category over 88% of firms reported that they offered a plan.

The results of this small survey of organizations are consistent with the finding from the Green Shield data that almost all employees of manufacturing firms have drug coverage, and most face minimal copayments. All civil servants have coverage with varying levels of copayment. Although the other unions also

Table 6: Distribution of Hourly-Paid Employees, Firms and Drug Plans by Degree of Cost-Sharing and Size of Firm

Employee Share of Cost	Number of Companies	Number of Employees
0%	302	95,832
1-30%	33	4,226
31-50%	25	1,974
51-99%	3	143
Total	363	102,166

Firm Size	Number of Companies Without Plan	Number of Employees Without Plan	Percent of Employees With Plan (%)
1-49	136/153	3,319	88.3
50-99	87/88	6,029	98.9
100-499	111/118	24,344	94.0
500 & over	27/29	68,603	93.0

indicated that their members have coverage, one must be cautious making conclusions regarding the extent of coverage for employees in these sectors generally, because non-manufacturing, non-government sectors have lower rates of unionization (e.g., retail trade). Perhaps most interesting is the fact that almost one-quarter of the members of the farming federation purchase coverage - self-employed individuals such as farmers are a particulary vulnerable group. The most recent figures, however, indicate that 42,000 individuals work in agriculture on their "own account" (out of a total of 122,000 individuals who work in the agricultural sector) (Statistics Canada, 1988) so the 5,000 members of the OFA plan are a small proportion of total.

An honest assessment of all these efforts must be that they have provided few new insights into third party coverage. The requisite data for gaining such insights are simply not currently available. The investigations produced no evidence to refute the often quoted figure that approximately 85% of the population have some form of third party coverage, and the evidence certainly suggest that, at minimum, a sizable majority of the population has coverage. It is probable that the average person employed full-time has few access problems - most drug expenses are covered, and they have adequate resources to meet the copayment requirements. Individuals with extraordinary drug expenses, those requiring special drugs, those only employed part-time, and other subgroups who do not qualify for the ODB program or for private third party coverage, however may face financial barriers.

B. Specific Population Subgroups Experiencing Access Problems

The second approach to gaining insight into access problems involved identifying specific groups of individuals who may not have adequate resources to obtain needed drugs. The most obvious groups are those individuals with either low incomes (but who do not qualify for Family Benefits or General Welfare, both of which entitle them to an ODB card), extraordinarily high drug expenses, or both.

1. Low-Income Individuals

As noted above, most individuals employed full-time probably have the resources to obtain needed drugs. But individuals working in low-paying, near minimum-wage, jobs are less likely to receive third party coverage as a benefit, often earn enough income to disqualify them from Family Benefits (F.B.) or General Welfare (G.W.), yet, especially if they are the sole earner in a household, may not have the resources to obtain prescription drugs. That is, they may "fall through the cracks" of public and private coverage. It is difficult to quantify how large of a problem this is. Income data indicate that in 1987 approximately 18% or 646,920 of Ontario households (families and unattached individuals) had less than $15,000 in income, including F.B., G.W., and other federal and provincial transfer programs

(Statistics Canada, 1987). Subtracting from this the number of households receiving F.B. or G.W. and the number of households whose head was aged 65 and over and whose total household income was less than $15,000, leaves 137,949. That is, there are approximately 137,949 households that earn less than $15,000 (from all members), that are not receiving social assistance and are not aged, and hence, do not qualify for a ODB card.

Some low-income households may qualify for assistance with drug costs through either of the two municipal programs, Special Assistance or Supplementary Assistance. But coverage under these program varies considerably, and outside of urban areas many municipalities do not provide this coverage. In the 1987-88 fiscal year, a total of 2.0 million dollars were expended for prescription drugs through Special Assistance programs in Ontario. If beneficiaries of Special Assistance had the same average cost per claim as those in the ODB plan receiving F.B. or G.W., ($10.00), and Special Assistance covered the total drug costs, this implies that the program processed approximately 20,000 claims during the year. Even assuming the program only covered one-half the cost for each claim, it would imply only 40,000 claims. Based on ODB experience with the number of claims per person, this translates into benefits for no more than a few thousand households.

While these two programs unquestionably provide needed assistance to some low-income individuals who do not qualify for other public or private programs, too many municipalities do not

fund the programs, and among those that do, coverage is often minimal. In short, the programs cannot be seen as systematically meeting the needs of this population.

In response to concerns regarding drug access for low-income individuals, the Report of the Social Assistance Review Committee recommended that individuals earning just above the eligibility limit for F.B. or G.W. be permitted to receive a ODB drug card (Social Assistance Review Committee, 1988). The loss of drug benefits provides disincentive to leave public assistance for those who could earn slightly more than the eligibility limit. This recommendation has been implemented, and took effect October 1, 1989. Under the extension of benefits, a buffer zone has been created above the income limit for public assistance. The buffer zone for individuals is $50.00 per month and for families is $100.00 per month. Individuals/families with income exceeding the eligibility limit for F.B. or G.W., but in the buffer zone, will not qualify for F.B. or G.W., but will be eligible for ODB program benefits.

Certain families/individuals with incomes outside the buffer zone, but who have high drug costs may also be eligible for a drug card. If the drug costs equal or exceed the amount by which an individual/household's income exceeds the buffer limit, they will be eligible for an ODB card. The Income Maintenance Branch was not able to provide data on the number of individuals who will be affected by the change, or on the estimated impact of this on ODB program expenditures. But it is clearly a positive step towards

providing coverage to a highly vulnerable group of individuals.

2. Individuals with Extraordinary Drug Expenses

Individuals with disabilities or chronic diseases that require expensive drug treatment probably face the most pressing problems in obtaining prescription drugs. If they are employed full-time in a firm that offers drug coverage as a fringe benefit, they may be excluded from this insurance under a pre-existing condition clause. The Ontario Human Rights code permits these exclusions and states that employment without discrimination is not violated, "where a reasonable and bonafide distinction, exclusion or preference is made in an employee disability, life insurance plan or benefit because of a pre-existing handicap that substantially increases risk" (Section 24(3)(a)). Even if these persons do qualify, many private third party plans have lifetime limits on the amount of benefits paid (e.g., Blue Cross' is currently $6000.00); if their drug expenditures are extraordinarily high, this limit may be reached in a relatively short period of time. Without third party coverage of any sort, even individuals with above average incomes can face severe financial difficulties purchasing drugs for which the expenses can run into the many thousands of dollars per year. What are some of the groups that may face such problems?

Disabled: The disabled face particular difficulty because many

have low incomes and face above average drug costs. As a follow-up to the 1986 Census, the Health and Activity Limitation Survey collected extensive information on disabled individuals (Statistics Canada, 1989a). The survey results indicate that there are 691,590 disabled persons in Ontario between the ages of 15 and 64. Based on scores on the Activities of Daily Living Test, two levels of disability severity are distinguished - "disabled" and "more severely disabled". Of those disabled, 59% report daily use of prescription drugs; of those more severely disabled, 70.5% report daily use of prescription drugs. With regards to expenditures on prescription drugs, 28.1% of the disabled reported out-of-pocket expenditures and 29.7% of the more severely disabled reported such expenditures. Though the questionnaire included a question asking for the amount of out-of-pocket expenditures, Statistics Canada does not report the figures because they are not felt to be sufficiently reliable (Statistics Canada, 1989b).

With respect to income, the survey found that in the year prior to the survey, 49% of the disabled and 58% of the more severely disabled earned less than $10,000 (ARCH, 1989). Hence, a number of the disabled qualify for public assistance. In fact, approximately 32% of the combined F.B. and G.W. recipients are disabled (Social Assistance Review Committee, 1988). Some disabled deliberately go on these programs so as to qualify for drug benefits. But many do not qualify for these programs and have low incomes. The creation of the buffer zone in the F.B. and

G.W. programs will help many of these individuals, but as noted above, there is no estimate of exactly how many.

Individuals with Chronic Diseases: A second category of individuals who may face exceptional problems are those individuals with chronic diseases, which often require expensive drug treatments. Recent advances in drug therapy have both improved the quality of life, and extended the life of many who suffer from chronic diseases. But many of these therapies are expensive. In an interim report the Inquiry recommended the extension of coverage to two such groups (Pharmaceutical Inquiry of Ontario 1988b), persons with cystic fibrosis and thalassemia, and this recommendation has since been implemented. The question, then, is whether there are other such groups of chronic disease patients who deserve benefits. Five disease categories were suggested by the Advocacy Resource Centre for the Handicapped (ARCH): chronic arthritis, kidney disease, cancer, diabetes, and multiple sclerosis. Organizations representing each of these patient groups in Ontario were contacted.

Two types of access problems emerged from these contacts. The first is the problem of financial barriers discussed above in relation to the disabled: many have incomes that exclude them from public coverage, but because of pre-existing clauses they do not qualify for private insurance. Further, when they do qualify they quickly reach lifetime expenditure limits. In addition, specific drugs or devices deemed essential by these groups are not

covered by private or public insurance. These include items such as aspirin for arthritis patients, certain hormones used in the treatment of cancer patients, syringes for diabetics, and vitamins and anti-rejections drugs (other than cyclosporin) for kidney patients.

In general, however, the organizations were not able to provide data on the number of persons suffering from such access problems, or on the average drug costs for persons with the respective diseases. The Ontario Branch of the Kidney Foundation of Canada provided information indicating that in 1986 there were approximately 3,500 persons suffering form End Stage Renal Disease, of whom 1,700 were receiving dialysis treatment and the remainder were transplant recipients (Kidney Foundation of Canada, 1989). Of particular concern to the Foundation was inconsistency in the provision of drugs in hospitals, whereby there is variation in exactly which drugs the patient must pay for. In addition, two areas of concern were the vitamins needed by dialysis patients and non-cyclosporin immuno-suppressant drugs for transplant recipients. The cost of these drugs can be as much as hundreds of dollars each month for those suffering with kidney disease. Nc other organizations were able to provide specific data.

The second type of access problem relates to physical barriers. Many of the drugs taken by those with chronic diseases require close monitoring. For patients living in rural areas, particularly in the North, travel to the appropriate clinic is often difficult. Some of the special drugs needed are also

difficult to obtain because rural pharmacies do not stock them. This latter problem would appear to be one of drug distribution.

In summary, it would appear that the vast majority of residents have third party coverage for both inpatient and outpatient drugs. Those employed full-time face low levels of cost-sharing and, for the average person, are unlikely to face access problems. Low-income working individuals are vulnerable, and the recent changes to the social assistance programs, through the creation of buffer zones, will improve access for this group of residents. Finally, certain groups of individuals with chronic diseases do suffer access problems, but accurately quantifying the extent of the problems was not possible.

IV. OTHER DRUG REIMBURSEMENT PROGRAMS

The experiences of other jurisdictions in designing and operating publicly-funded drug reimbursement programs can offer valuable insights for reforming the ODB program to better attain its goals. The remaining provinces/territories in Canada and other industrialized countries all provide some form of public drug coverage, and there is considerable variation in the design of the programs. This section summarizes the key features of the pharmacare programs in the other provinces/territories, and briefly reviews programs in Europe, Japan and the U.S.

A. Canada

All other nine Canadian provinces as well as the Yukon and the Northwest Territories have publicly-funded drug reimbursement programs. The majority of these programs were introduced between 1972 and 1975, the exceptions being Northwest Territories Pharmacare and Yukon Pharmacare, which were not established until 1979 and 1981, respectively. In several provinces municipal welfare programs providing drugs to social assistance recipients on an assisted basis were forerunners of the present programs.

Over time, most provinces have tended to expand their drug plans by increasing the number of eligible beneficiaries (see Figure 1) and the number and type of drugs that qualify as

Figure 1: Important Events in History of Provincial Drug Programs

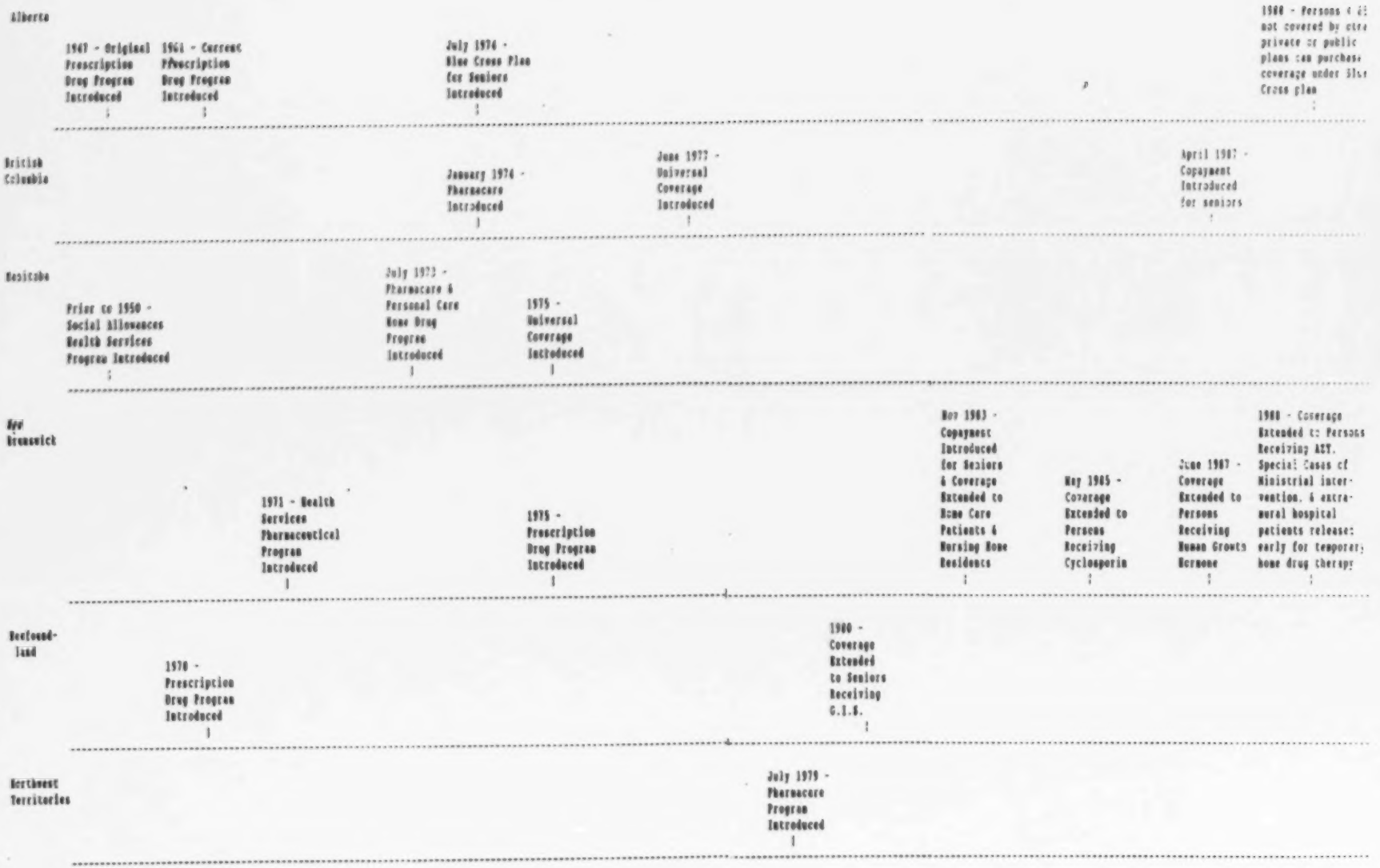
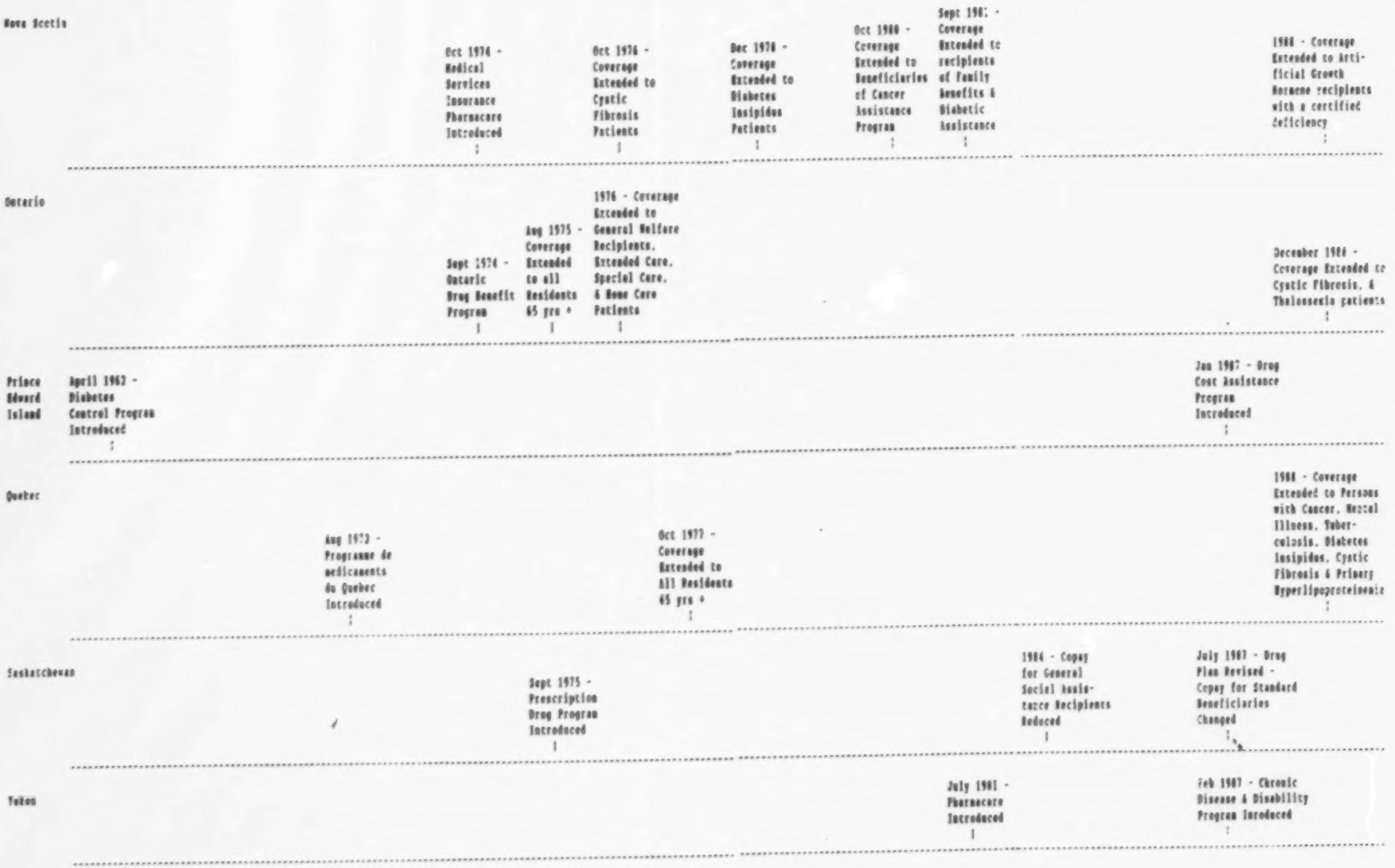

Alberta
1947 - Original Prescription Drug Program Introduced
1961 - Current Prescription Drug Program Introduced
July 1974 - Blue Cross Plan for Seniors Introduced
1988 - Persons not covered by other private or public plans can purchase coverage under Blue Cross plan
British Columbia
January 1974 - Pharmacare Introduced
June 1977 - Universal Coverage Introduced
April 1987 - Copayment Introduced for seniors
Manitoba
Prior to 1950 - Social Allowances Health Services Program Introduced
July 1973 - Pharmacare & Personal Care Home Drug Program Introduced
1975 - Universal Coverage Introduced
New Brunswick
1971 - Health Services Pharmaceutical Program Introduced
1975 - Prescription Drug Program Introduced
Nov 1983 - Copayment Introduced for Seniors & Coverage Extended to Home Care Patients & Nursing Home Residents
May 1985 - Coverage Extended to Persons Receiving Cyclosporin
June 1987 - Coverage Extended to Persons Receiving Human Growth Hormone
1988 - Coverage Extended to Persons Receiving AZT. Special Cases of Ministrial intervention. & extra-mural hospital patients release: early for temporary home drug therapy
Newfoundland
1978 - Prescription Drug Program Introduced
1988 - Coverage Extended to Seniors Receiving G.I.S.
Northwest Territories
July 1979 - Pharmacare Program Introduced

Figure 1: Important Events in History of Provincial Drug Programs - Cont'd.


Nova Scotia
Oct 1974 - Medical Services Insurance Pharmacare Introduced
Oct 1976 - Coverage Extended to Cystic Fibrosis Patients
Dec 1978 - Coverage Extended to Diabetes Insipidus Patients
Oct 1980 - Coverage Extended to Beneficiaries of Cancer Assistance Program
Sept 1981 - Coverage Extended to recipients of Family Benefits & Diabetic Assistance
1988 - Coverage Extended to Artificial Growth Hormone recipients with a certified deficiency
Ontario
Sept 1974 - Ontario Drug Benefit Program
Aug 1975 - Coverage Extended to all Residents 65 yrs +
1976 - Coverage Extended to General Welfare Recipients, Extended Care, Special Care, & Home Care Patients
December 1988 - Coverage Extended to Cystic Fibrosis, & Thalassemia patients
Prince Edward Island
April 1962 - Diabetes Control Program Introduced
Jan 1987 - Drug Cost Assistance Program Introduced
Quebec
Aug 1972 - Programme de medicaments du Quebec Introduced
Oct 1977 - Coverage Extended to All Residents 65 yrs +
1988 - Coverage Extended to Persons with Cancer, Mental Illness, Tuberculosis, Diabetes Insipidus, Cystic Fibrosis & Primary Hyperlipoproteinemia
Saskatchewan
Sept 1975 - Prescription Drug Program Introduced
1986 - Copay for General Social Assistance Recipients Reduced
July 1987 - Drug Plan Revised - Copay for Standard Beneficiaries Changed
Yukon
July 1981 - Pharmacare Introduced
Feb 1987 - Chronic Disease & Disability Program Introduced

benefits. In some cases this expansion has been accompanied by the introduction of copayments for certain groups of beneficiaries. There is currently considerable variation across the programs with respect to who is eligible for coverage, which beneficiaries cost-share, the level cost-sharing, and what drugs are covered. In addition, they differ as to how they define drug cost for the purpose of reimbursement, and what type of product selection is practiced, if any. In describing the provincial/territorial programs it is easiest to take each of these dimensions in turn.

1. Eligible Beneficiaries

In terms of eligible beneficiaries, the programs can be classified according to three categories: those that provide coverage only to social assistance recipients and/or seniors; those that provide universal coverage (i.e., essentially all residents of the province are eligible for some type of drug reimbursement); and those that provide coverage to seniors, social assistance recipients and one or more of the following groups of individuals: home care patients, residents of nursing homes/extended care facilities, persons diagnosed with specific disease conditions or persons receiving specific drug therapies. (See Table 7.) A detailed listing of the various categories of beneficiaries within each plan is provided in Table 8.

Seniors and/or Social Assistance Recipients only: Newfoundland is the only province that currently provides benefits to seniors and

Table 7: Provincial Programs Classified by Eligible Beneficiaries

Universal Programs

Alberta Prescription Drug Program and Blue Cross Non-Group Plan[4]

British Columbia Pharmacare

Manitoba Pharmacare, Personal Care Home Drug Program & Social Allowances Health Services Program

Saskatchewan Prescription Drug Plan

Seniors, Social Assistance Recipients and at least one other Group

New Brunswick Prescription Drug Program & Health Services Pharmaceutical Program

Northwest Territories Pharmacare

Nova Scotia Medical Services Insurance Pharmacare

Ontario Drug Benefit

P.E.I. Social Services Drug Program, Diabetes Control Program & Drug Cost Assistance Program

Programme de Medicaments du Quebec

Yukon Parmacare & Chronic Disease Disability Program[5]

Seniors and Social Assistance Recipients Only

Newfoundland and Labrador Prescription Drug Program

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[4] Not all residents are automatically eligible. The non-poor elderly and non-elderly can opt to join provincially-sponsored plans if they do not have private coverage.

[5] The Yukon program covers seniors and persons with a chronic disease or functional disability. It best fits this category although social assistance recipients are not covered under the program.

Table 8: Detailed Listing of Eligible Beneficiaries, by Province

Programs Covering Seniors and Social Assistance Recipients Only

Newfoundland

I. Residents who receive Social Assistance Benefits

II. Residents 65+ who receive GIS (Guaranteed Income Supplement)

Universal Programs

British Columbia

GROUP 1 - Full assistance:

I. Residents of licensed long-term care facilities

II. Holder of valid Human Resources Program "W" card issued on basis of need

GROUP 2 - Partia l Assistance

III. Residents 65+

IV. All residents of B.C.

Saskatchewan

I. Standard: All residents with a valid Health Services card not covered by other Federal or Provincial plans

II. Residents of Special Care Homes not receiving Social Assistance

III. "Unique Circumstance" individuals with extraordinarily high ongoing costs under the deductible plan

IV. Special Beneficiaries: paraplegics, cystic fibrosis & end-stage renal disease patients

V. Social Assistance:
(i) General;
(ii) Residents nominated on basis of ongoing multiple Rx usage; dependents of Plan 1 recipients under the age of 18;
(iii) Social Assistance recipients in Special Care Homes

VI. Provincial wards & inmates of Provincial Correctional Facilities

VII. Patients registered under Palliative Care Program of Branch

Manitoba

I. Residents of Manitoba not covered by other Federal or Provincial Benefits

II. Residents in Personal Care Homes

III. Persons financially indigent

Alberta

I. Persons receiving Social Assistance, Assured Income for the Severely Handicapped, and Guardian Social Allowance

II. BLUE CROSS PLAN
(i) Persons 65+
(ii) Persons <65 not covered by other private or public plans who wish to purchase coverage

Table 8: Detailed Listing of Eligible Beneficiaries, by Province (Cont'd)

Programs Covering Seniors, Social Assistance Recipients and at least one other Group

Ontario

I. Persons 65+

II. Persons receiving Home Care

III. Residents of Homes for Special Care

IV. Persons receiving daily care in an Extended Care Facility

V. Persons receiving Family Benefits Assistance

VI. Persons receiving municipal General Welfare Assistance

Quebec

I. Persons 65+

II. Persons receiving Social Assistance

III. Individuals with cancer, mental illness, tuberculosis, diabetes insipidus, cystic fibrosis, and primary hyperlipoproteinemia

New Brunswick

PROGRAM 1:

I. Persons 65+

II. Home Care patients

III. Licensed Nursing Home residents

IV. Extramural hospital patients released early for temporary home drug therapy

V. Organ transplant recipients receiving cyclosporin

VI. "Special" cases of ministerial intervention

VII. Patients approved to receive human growth hormone

VIII. AIDs patients receiving AZT

PROGRAM 2:

X. Social Service recipients & dependents

XI. Child Welfare recipients

XII. Some Mental Health Patients

Nova Scotia

I. Persons 65+

II. Social Service persons receiving Family Benefits

III. Social Services persons receiving Diabetic Assistance

IV. Cystic Fibrosis patients

V. Diabetes Insipidus (Neurogenic) patients

VI. Cancer Assistance Program patients, dependent on financial basis

VII. Artificial hormone recipients for patients with certified dependency

Table 8: Detailed Listing of Eligible Beneficiaries, by Province (Cont'd)

P.E.I.	Northwest Territories	Yukon
I. Persons receiving Social Assistance	I. Persons 60+ (non-native & Metis)	I. Residents 65+ or aged 60+ & married to a resident who is 65+
II. Diabetics	II. Non-native & Metis persons diagnosed as having certain disease conditions	II. Residents who have a chronic disease or serious functional disability
III. Persons 65+ upon application	III. Non-native & Metis persons designated by Dept. of Social Services as medically indigent	

Source: Anderson (1989).

Seniors and/or Social Assistance Recipients only: Newfoundland is the only province that currently provides benefits to seniors andsocial assistance recipients only. The Newfoundland Prescription Drug Program is also unique among the provincial/territorial programs in that, rather than covering all seniors, it covers only those seniors who receive federal Guaranteed Income Supplement (G.I.S.).

Seniors, Social Assistance Recipients and at least one other Group: Five provinces (New Brunswick, Nova Scotia, Ontario, P.E.I., and Quebec.) and the two territories presently provide coverage to seniors, social assistance recipients[6], and at least one of the following: home care patients, residents of nursing homes/extended care facilities, persons diagnosed with specific disease conditions or persons receiving specific drug therapies. Each of the programs, with the exception of P.E.I. and Ontario have provided coverage to all seniors for their full history. Only the Yukon and Nova Scotia have not included social assistance recipients as beneficiaries from the outset of their programs. Nova Scotia extended coverage to these individuals in 1981.

Among the "other" groups included in the various programs, only Ontario and New Brunswick cover Home Care patients and residents of nursing homes/extended care facilities. In

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[6] The Yukon program covers seniors and persons with a chronic disease or serious functional disability. It best fits in this category, however, despite the fact that social assistance recipients are not covered under the program.

contrast, all seven provinces/territories cover persons diagnosed with specific disease conditions and/or persons receiving specific drug therapies[7]. Until recently Ontario and Quebec were the only members of this category not to cover persons with specific diseases.

The range and number of disease conditions and specific drug therapies covered varies considerably across these provinces/territories. The Northwest Territories, however, appears to cover the most extensive list of disease conditions and New Brunswick the greatest number of specific drug therapies.

Universal Programs: The four remaining provinces, Saskatchewan, Alberta, British Columbia, and Manitoba all have universal programs. Saskatchewan is the only province to have had such a program from the outset: all residents have been eligible for drug cost assistance since the drug program was implemented in September 1975. The other three provinces extended their programs to become universal only after initially operating ones covering specific population subgroups. Strictly speaking, the Alberta program may not be considered universal. Only persons on Social Assistance are automatically eligible; other individuals can opt for coverage under the plan (with an associated coinsurance rate), but participation is voluntary. Also, as will be described in more detail below, although all residents in each of these

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[7] In Quebec and Ontario those afflicted with specific diseases receive drugs directly from a hospital, and technically then, do not receive them as a benefit of the drug program.

provinces are eligible for some form of assistance with drug costs, different subgroups of residents face differing levels of cost-sharing.

2. Beneficiary Cost-Sharing

At present, four provinces/territories require no cost-sharing whatsoever. They are Ontario, Northwest Territories, Nova Scotia, and the Yukon.

The other eight provincial programs require cost-sharing for one or more beneficiary groups, most commonly seniors not receiving social assistance. The various copayment mechanisms involve some combination of deductibles, a coinsurance rate, a per-prescription charge, or a cap on expenditures. Coinsurance is applied to either the total prescription cost, the ingredient cost only, or the dispensing fee only. A summary of the copayments and the associated beneficiary groups is provided in Table 9.

The eastern provinces tend to favour fixed charges and the western provinces coinsurance. New Brunswick, P.E.I., and Newfoundland all require certain beneficiary groups to pay a fixed amount per prescription whereas Alberta, British Columbia, Saskatchewan, and Manitoba all require certain beneficiary groups to pay a percentage of either the total prescription cost or the dispensing fee.

a. Seniors

Seniors not receiving social assistance are required to share the cost of obtaining prescription drugs in seven provinces. Under the Alberta Blue Cross Non-Group Plan seniors pay 20% of the total prescription cost; in Saskatchewan and Manitoba seniors face an annual deductible of $75.00 and $88.50 per family, respectively, and a 20% coinsurance rate on the cost of drugs purchased after the deductible has been reached. British Columbia Pharmacare requires seniors to pay 75% of the dispensing fee up to $125 per individual per year. This copayment was introduced in April 1987. Previously, seniors in British Columbia received their drugs at no charge.

New Brunswick, P.E.I., and Newfoundland require eligible seniors to pay a per-prescription charge. In P.E.I. this deductible is the amount of the dispensing fee plus the first $4.00 of ingredient cost. In Newfoundland it is the amount of the dispensing fee[a] and in New Brunswick it is a fixed charge of $6.34. This particular copayment was introduced in 1988, and represented a considerable increase in the cost-sharing for seniors. Previously, seniors paid $3.00 per prescription up to a total of $45 per year. When the current charge was introduced the annual expenditure limit was removed for all seniors except those

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[a] The dispensing fee is not set by negotiations in Newfoundland, hence, it can vary from pharmacy to pharmacy.

Table 9: Provincial Drug Benefit Programs with Beneficiary Cost-Sharing

		Type of Copayment	Comments
Alberta	Program II(i) (seniors)	20% of total Rx charge	- originally Program I recipients paid $1.00 or 20% of price, whichever was greater.
	Program II(ii)	20% of total Rx charge and balance of premium	- introduced in 1988.
British Columbia	Plan III (seniors)	75% of dispensing fee to a maximum of $125/person/yr	- introduced April 1987; previously no copayment for seniors.
	Plan IV (all residents)	$325/family/yr + 20% thereafter with a ceiling of $2000 total payment	
Saskatchewan	Plan I (all residents)	65+: $75 + 20% thereafter/family/yr <65: $125 + 20% thereafter/family/yr	- July 1987 copayment type changed from max of $3.95/Rx.
	Plan II (Special Care)	$3.95/Rx	
	Plan III (Unique Circumstance)	20% of total Rx charge	- prior to July 1987 beneficiaries not recognized as a separate group
	Plan X(ii) (general social assistance)	$2.00/Rx	- copayment reduced from max of $3.95/Rx in 1984.
Manitoba	Program I (all residents)	65+: $88.50 + 20% thereafter/family/yr <65: $156.15 + 20% thereafter/family/yr	
P.E.I.	Program III (seniors)	Dispensing fee + 1st $4.00 of ingredient cost	
Nfld	Plan II (seniors)	Dispensing fee	

Table 9: Provincial Drug Benefit Programs with Beneficiary Cost-Sharing (cont'd)

		Type of Copayment	Comments
New Brunswick	Plans I,II & VI (seniors, Home Care patients & Special Cases)	$6.34/Rx; OAS & GIS recipients pay up to $120/yr maximum; OAS only recipients have no ceiling on copayment	- originally no copayment existed: copayment similar to current one ($3.00 /Rx up to $30/yr max.) introduced for Plan I November 1983. Ceiling removed for nonrecipients of both OAS & GIS, and per Rx charge raised to $6.34 in 1988.
	Plan X (social service recipients & dependents)	Adults: $2.00/Rx Children: $1.00/Rx	- copayment introduced in 1971.
Quebec	Plan III	$2.00/Rx of one month supply	- introduced in 1988

receiving both Old Age Security and Guaranteed Income Supplement, for whom a new annual limit of $120 was established.

b. Social Assistance Recipients

Social assistance recipients are required to pay a portion of the cost of drugs in only two provinces, New Brunswick and Saskatchewan. In New Brunswick adult social service recipients pay $2.00 per prescription and their dependents pay $1.00 per prescription. These amounts have not changed since the program was implemented. In Saskatchewan, general social assistance

recipients (as opposed to social assistance recipients in special care homes and those individuals nominated on the basis of need) pay $2.00 per prescription. Prior to 1984 these individuals paid up to $3.95 per prescription. In the past, social assistance recipients in Alberta paid $1.00 or 20% of the prescription cost, whichever was greater. This, however, has been discontinued.

c. Non-Elderly, Non-Social Assistance Beneficiaries

Among the provincial programs with universal coverage, all require non-aged, non-poor residents to cost-share. The level of cost-sharing for these residents, however, is higher than for the aged. In Saskatchewan and Manitoba the coinsurance rate that applies once the deductible is reached is the same as for the elderly (20%), but the deductibles are higher for non-seniors. In Saskatchewan, for non-seniors, the deductible is $125 per family and in Manitoba it is $156.15 per family.

In British Columbia, residents who are neither seniors, social assistance recipients, nor residents of long-term care facilities face an annual deductible of $325 per family per year plus 20% thereafter, with a limit of $2000 in total payments. Recent changes to the Alberta Blue Cross Plan now allow residents under age 65 not covered by other private or public plans to purchase drug coverage. These individuals pay a portion of the Blue Cross premium plus 20% of their drug costs.

In summary, there are two important patterns that emerge.

The first is that all four provincial programs providing universal coverage require beneficiary cost-sharing. In contrast, fewer than half of the programs that only provide coverage to designated population subgroups require cost-sharing. It would appear that the provinces may be trading off scope of coverage with cost-sharing. Second, the level of cost-sharing appears to have been increasing in recent years. Two provinces (British Columbia and New Brunswick) have introduced copayments for beneficiary groups who previously received their drugs free of charge, and one province (Saskatchewan) completely overhauled its system of copayments, substantially increasing the cost-sharing for a large proportion of its residents. Only once has a copayment been eliminated or reduced.

3. Benefits

Five provinces/territories (Ontario, Newfoundland, Saskatchewan, Quebec, and the Northwest Territories) define as eligible benefits all drugs listed in a formulary or schedule (The Ontario Drug Benefit Formulary/Comparative Drug Index, Common Usage Drug Schedule/Newfoundland Interchangeable Drug Products Formulary, Saskatchewan Prescription Drug Plan Formulary, Liste de Medicaments, and the Northwest Territories Pharmacare Formulary). The Saskatchewan and Northwest Territories programs include, in addition to the drugs listed in their respective formularies, special authorizations, or drugs approved under exception drug

status (Ontario only recently moved towards eliminating its special authorization program). The Saskatchewan program also covers selected extemporaneous compounds and special medications for specific conditions. The latter have been covered only since September 1987.

The remaining provinces/territories (Manitoba, the Yukon, British Columbia, Alberta, New Brunswick, Nova Scotia, and P.E.I.) in comparison, include as eligible benefits all drugs for which a prescription is required by law (with some exceptions)[9]. All seven programs also include as benefits a limited number of nonprescription drugs. The British Columbia program additionally covers medical supplies such as syringes and ostomy and prosthetic appliances, and the New Brunswick, Nova Scotia, and P.E.I. programs provide specific drugs and appliances for special beneficiary groups. (See Table 10 for a detailed list of benefits in each of the provinces/territories.)

Over the years the number of drugs that qualify as benefits under each of these programs has increased as the number of drugs for which a prescription is required has increased in Canada and the individual provinces. Similarly, the number of drugs listed in each of the other six provinces'/territories' formularies or schedules has been expanded to include more and more

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[9] As one of the three provinces (Nova Scotia, Yukon, and P.E.I.) that define eligible benefits separately for certain beneficiary groups, P.E.I. might also be included with those provinces that reimburse only those drugs listed in a formulary or schedule. Under the P.E.I. program, seniors receive assistance for drugs included on a benefit list.

pharmaceutical products as they have become available.

4. Definition of Drug Cost

Ontario is unique in defining drug cost as best available price (BAP) plus a mark-up. The most common definition of cost for purposes of reimbursement is simply the price listed in the formularies, or what amounts to the manufacturer's suggested price. Quebec, Manitoba (Programs I and III), Newfoundland, and New Brunswick use this definition. The next most common definition is the actual acquisition cost (AAC) of the drug; that is, the net cost to the pharmacy after discounts, rebates etc. have been applied. British Columbia, Nova Scotia, Manitoba (Program II), and P.E.I.[10] currently use this definition. Several other provinces have used this definition at various times in the past.

Two programs, Alberta and Northwest Territories, define the cost of a drug as the wholesaler cost plus a mark-up. In Alberta the mark-up is 25% and in Northwest Territories it is 30%.

For a number of years the Saskatchewan program defined drug cost as AAC to a maximum defined by prices in the formulary. In practice this definition resulted in actual drug costs at or near prices listed in the formulary. In September 1987, the definition

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[10] In P.E.I. drug cost is defined as AAC only for drugs dispensed through the government dispensary to social assistance recipients and diabetics. Seniors obtain their drugs through retail pharmacies under the program. The maximum allowable cost of these drugs is based on the manufacturer's list price.

Table 10: Detailed Listing of Benefits, by Province

Manitoba	New Brunswick	British Columbia	Nova Scotia
I. Pharmacare: All drugs for which a Rx is required by law (except Rogaine & Talwin Compound-50), plus a limited number of non-Rx drugs (approximately 350-400 products are listed in Schedule C, e.g. insulin, needles & syringes, blood glucose & urine-testing agents) Programs II & III. Virtually all Rx drugs (except as noted above) & non-Rx drugs	All drugs for which a Rx is required by law (except certain cough remedies & antacids, calcium preparations, appetite suppressants multivitamins, Nicorette, & products used for cosmetic purposes), a limited number of non-Rx drugs, plus specific drugs for special beneficiary groups	All Provincial & Federal Rx Schedule drugs plus a limited number of non-Rx drugs & medical supplies, e.g. syringes, ostomy & prosthetic appliances	I & II. 65+ & Family Benefits recipients: All drugs requiring a Rx by law, plus supplementary benefit list of OTCs, as well as diabetic supplies & testing materials, & ostomy supplies III. Diabetic Assistance recipients: Diabetic supplies & testing materials IV, V, VI, & VII. Particular coverage of medications related to the condition

Newfoundland	P.E.I.	Yukon	Alberta
I. Social Services: All Rx drugs, insulin & diabetic supplies, a small number of single entity non-Rx drugs antacids, vitamins & antihistamines II.65+: All Rx drugs insulin & diabetic supplies, a very limited number of non-Rx drugs (only those covered in single entity) & vitamins	I. Social Assistance recipients: All drugs for which an Rx is required by law plus a limited number of non-Rx drugs II. Diabetics: Diabetic supplies (oral hypoglycemics urine testing material & insulin III. 65+: Benefit List products only	I. 65+: All drugs for which a Rx is required plus a limited number of non-Rx items II. Chronically ill & disabled: Rx drugs only as controlled under the Food and Drugs Act & the Narcotic Control Act, plus biologicals	Products listed in the current CPS on the Rx of a physician, dentist or podiatrist, except the following, unless a Rx is required by law: contact lens care products, diagnostic aids, diets, infant foods, lozenges, mouthwashes, non-medicated shampoos, salt substitutes, skin cleansers including soaps, sugar substitutes, skin protectives & emollients, & surgical supplies

Table 10: Detailed Listing of Benefits, by Province (cont'd)

Saskatchewan	Ontario	Quebec	Northwest Territories
Drugs listed in Formulary plus those approved under exception drug status, & selected extemporaneous compounds AZT for AIDs, cyclosporin for transplants, epidural morphine, deferoxamine, calcitonin, lupreolide acetate menotropins, & synthetic growth hormone are available at no charge when such treatment is approved	Drugs listed in Formulary, approved interim non-Formulary benefits, oxygen, allergenic extracts, influenza virus vaccine, & approved non-Rx drug products distributed in bulk to Nursing Homes & Homes for the Aged	I & II. 65+ & Social Assistance recipients: Drugs in "liste de medicaments" as well as drugs for beneficiaries in "special cases" III. Drugs prescribed for persons afflicted with cancer, mental illness, tuberculosis, diabetes insipidus, cystic fibrosis, and primary hyperlipoproteinemia	Drugs listed in Formulary plus those available under Exception Drug Coverage

Source: Anderson (1989)

of drug cost was changed to AAC plus a markup to allowable maximums depending on ingredient cost, where AAC may include a maximum 11% upcharge allowed to the wholesaler by contract.

There is no definition of drug cost under the Yukon Pharmacare program. Recently, AAC plus 30% was introduced as the definition of drug cost under the Chronic Disease and Disability program.

5. Product Selection

Two provinces, Saskatchewan and Newfoundland currently have mandatory product selection legislation. In these provinces, pharmacists are required to dispense the lowest-priced interchangeable drug listed in the formulary or schedule unless the physician indicates that no substitution is to be made. Product selection of a permissive type (i.e., the pharmacist is allowed but not required to dispense a lower-cost interchangeable) is presently practiced in Alberta, British Columbia, New Brunswick, Nova Scotia, Quebec, Manitoba, and Ontario.

P.E.I., the Yukon, and the Northwest Territories presently have no product selection legislation in place.

B. Other Industrialized Countries

All other industrialized countries have some type of public drug reimbursement programs. For many of these countries the

language barrier prevented us from obtaining detailed, current information on the various programs: we were dependent on English language surveys. As one would expect, there is far more variation in program design among the respective countries' programs than among the provincial programs within Canada. After a brief discussion of the salient patterns that emerge from an examination of the programs, a brief description of eligible beneficiaries, benefits, and cost-sharing provisions in each program is provided. Programs from Western Europe, Scandinavia, the U.S., and Japan were examined.

Among the industrialized countries, programs with universal coverage predominate. Of the nine European countries for which information was available, eight had essentially universal coverage. Japan provides publicly-funded insurance for all individuals who do not receive insurance through an employer; all citizens have insurance through either the public program or a private program. The U.S. is an outlier in low level of public funding for drug reimbursement programs.

The one feature that is common to all the programs is some level of consumer cost-sharing. Every program requires at least one group of beneficiaries to pay some portion of the cost of prescription drugs. The design of the copayment schemes and the beneficiaries to which copayments apply, however, differ considerably. The U.K. program is similar to the Canadian programs in that the level of copayment is linked to specific beneficiary groups. Those not exempt from patient charges pay a

per-prescription charge that has risen dramatically in the last nine years and equaled 2.60 pounds in 1988 ($4.85 Canadian). Other European countries tend to tie the copayment level to specific categories of diseases or drugs or to the cost of the drug. In France, for example, patients pay 60% of the costs of "minor treatments" and 30% of the cost of "life saving medicines". In both Finland and Sweden drugs used in the treatment of specific chronic diseases are provided free, but all other drugs are subject to consumer cost-sharing. In some countries, (e.g., Italy and Sweden) the level of the copayment depends on the cost of the drug, with the proportion of the total cost borne by the patient decreasing as the price of the drug increases. Therefore, although all countries have copayment provisions, no single type of copayment scheme predominates.

A tabular summary of the programs is provided at the end of this section; more detailed summaries are provided below.

1. Country Summaries

United Kingdom

Eligible beneficiaries - All citizens

Benefits - In November 1984 a limited list or "white list" of drugs that qualify for reimbursement was created. Prior to November 1984 all drugs that had market approval, including nonprescription items that had to be purchased in a pharmacy, qualified as benefits.

Patient charges (copayment) - Patients pay a fixed charge per drug item (in 1988 it equalled 2.60 pounds). (There may be multiple drug items on a single prescription slip.) In recent years the U.K. government has adopted a policy of annual increases in the prescription charge over and above the rate of inflation, and in excess of the rate of increase in the average cost of prescription items. The following groups are exempt from the per-item charge: all individuals under 18 years of age and those up to 21 years of age if they are full-time students; old age pensioners (men 65+, women 60+); expectant and nursing mothers; war and service disablement pensioners; recipients of Supplementary Benefit or Family Income Supplement and their dependents; pensioners with specific illnesses or disabilities. Others can apply for exemptions on the basis of low income though the number of individuals who do so is small. In addition, those who are not categorically exempt from charges can purchase prepayment certificates, which then exempt the patient from any prescription charge for a year.

Sources: O'Brien (1984); Greishaber (1982); Ryan (1987); Ryan and Birch (1989); Taylor (1988).

France

Eligible beneficiaries - All citizens

Benefits - all prescription drugs included on three benefit lists.

Copayment - There are three levels of copayment faced by consumers. Consumers pay 60% of the costs of "minor

treatments," 30% of the costs of "life-saving medicines," and receive drugs from a third list free. Unfortunately, there is little information regarding the classification procedure for determining in which list a drug is included. It has been estimated, however, that in 1984 50% of all prescriptions were for drugs on the list for which there is no copayment.

Sources: O'Brien (1984); Gordon (1984).

West Germany

Eligible beneficiaries - All citizens are required by law to be enrolled in either a public or private insurance plan. Any citizens who do not have private coverage are eligible for enrollment in the public plan. About 90% of the population participates in the public plan.

Benefits - All pharmaceutical products except cough and cold products, mouth and throat septics, laxatives, and travel sickness remedies.

Copayment - Patients pay a fixed charge for each drug prescribed (CDM 2.00 January 1983).

Note:

- Prior to 1978 physicians were reimbursed for their services at a lower rate when they prescribed a product that cost more than the calculated average prescription cost. The result was physicians avoided writing prescriptions for expensive products. This was changed when physicians who had lost some of their fees took the insurance companies to court and won.

Sources: O'Brien (1984); Greishaber (1982).

Italy

Eligible beneficiaries - All citizens

Benefits - All products listed in Prontuario Terapeutico

Copayment - Pharmaceutical products determined to be "priority drugs" (1984 = 1,400) are exempt from any patient copayment. All other products listed in Prontuario Terapeutico are subject to a patient copayment graded according to product price as follows in Jan. 1984:

Product price	Patient copayment
< Lir. 999	Lir. 200
Lir. 1,000 to 3,000	Lir. 400
> 3,000	Lir. 600

Note - 1 Lira = 0.000842 Canadian dollars

In recent years reform has been considered that would change the copayment for nonpriority drugs to 15% of the price or Lir. 10,000 whichever is lower. In addition the patient would pay a flat rate fee of Lir. 1,500 per prescription. It is not known whether this proposal has been adopted.

Sources: O'Brien (1984); Greishaber (1982).

Spain

Eligible beneficiaries - All citizens. Participation in the public scheme appears to be voluntary. Greishaber (1982) states that in 1981 approximately 74% of the population was covered.

Benefits - All market approved prescription drugs. Contraceptives, dietary products, and OTCs are not covered.

Copayment - Medications are classified as "essential" or "nonessential." Patients pay 10% of the costs of essential medications and 40% of the cost of nonessential drugs.

Sources: O'Brien (1984); Greishaber (1982).

Nordic Countries

The schemes in all four Nordic countries involve some type of copayment. Denmark is the only country that does not exempt certain drugs from copayment (i.e., no drugs are fully reimbursed). Norway, unlike the three other countries, does not have a universal scheme. In all four Nordic countries drug prices to the consumer are set by the authorities concerned. The retail price of a drug is uniform throughout a country.

Denmark

Eligible beneficiaries - All citizens

Benefits - All drugs approved by the medicinal committee of the National Board of Health and published in a formulary.

Copayment - Patients pay 25% of the cost of drugs used in the treatment of certain specified diseases (Group I) and 50% of the costs of most other drugs (Group II). The remainder (Group III) are reimbursed only to individual patients upon application. For the latter group the National Board of Health determines the percentage of reimbursement in each specific

case.

Sources: Lindgren and Silverberg (1985); Hemminki and Bormann-Larsen (1981).

Finland

Eligible beneficiaries - All registered members of the Social Security System.

Benefits - All prescription and nonprescription medicines for which permission to market has been granted by the National Board of Health.

Copayment - Drugs considered "essential and effective" in the treatment of specific chronic diseases (47 in 1985) are fully-reimbursed to patients determined by the local insurance office (based on certificates from physicians) to qualify for these free drugs. All other approved medications are partially reimbursed when recommended by a physician. In 1985 patients paid 50% of the costs of drugs above FM 15 (1 FM = 0.2684 Canadian dollars). This applies to the total cost of drugs on one or several prescriptions per buying occasion.

Sources: Lindgren and Silverberg (1985); Hemminki and Bormann-Larsen (1981).

Sweden

Eligible beneficiaries - All persons registered in the Swedish public insurance office.

Benefits - All drugs approved by the National Board of Health and Welfare for marketing in Sweden and prescribed by MDs or

dentists.

Copayment - As in Finland, drugs used in the treatment of certain specified chronic diseases (32 in 1985) are fully reimbursed. Qualification for free drugs is determined by individual physicians. All other medications are subject to a patient copayment graded as follows in 1985:

Price of product(s)[11]	Patient copayment
< SEK 20	100%
SEK 20 TO SEK 80	50%
> SEK 80	0%

Note - 1 SEK = 0.1789 Canadian dollars

All members of health insurance including chronically ill patients can opt for an alternative, "high-cost-exemption" scheme. Individuals choosing to participate are issued a card which is stamped for each paid visit to a medical care institution (which include physician examinations, purchase of medicines above 20 SEK, two telephone consultations with the doctor, or two visits to therapeutic gymnastics) to a total of 15 visits. Thereafter a second card is issued to the patient which entitles him to free medical care and medications beyond the 15 paid occasions and within twelve months counted from the date of the first visit.

Sources: Lindgren and Silverberg (1985); Hemminki and Bormann-Larsen (1981).

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[11] Cost of all medicines which are prescribed at the same time by the same doctor and dispensed on the same occasion.

Norway

Eligible beneficiaries - Individuals diagnosed with certain specified chronic diseases and persons prescribed expensive drugs by specialists for the treatment of nondesignated chronic diseases and approved on an individual basis by the National Insurance Institution.

Benefits - Drugs and preparations considered "important" in the treatment of certain specified chronic diseases (36 in 1985) and expensive drugs prescribed by specialists for the treatment of nondesignated chronic diseases.

Copayment - There is no copayment for drugs in the latter category. For drugs in the former category, children aged 16 years or younger, adults aged 67 years and older, and persons who have obtained pre-retirement disability pensions pay 25 NOK (1985) per prescription. Persons aged 17 to 66 years with a specific chronic disease pay 55 NOK (Jan 1985) per prescription. For both groups there is an annual cost-ceiling of NOK 840. To reach the cost-ceiling, a chronic patient may, however, combine his drug costs with expenditures for physician visits, consultations with a psychologist, purchases of technical articles and transportation expenses during treatment.

Note - 1 NOK = 0.1659 Canadian dollars

Sources: Lindgren and Silverberg (1985); Hemminki and Bormann-Larsen (1981).

Japan

Eligible beneficiaries - All citizens not covered by employee health insurance (i.e., all unemployed adults including the elderly, employees of small businesses, the self-employed, and farmers).

Benefits - All drugs listed on the national health insurance reimbursement list.

Copayment - It is not clear what patient charges exist.

Sources: Iglehart (1988a); Iglehart (1988b).

U.S. Public Plans

The two most important sources of public funds for drug reimbursement are the Medicaid and Medicare programs. Because Medicaid programs are administered at the state level, the exact eligibility criteria and coverage differ from state to state. But each program must meet minimum federal requirements to qualify for matching federal funds.

Medicaid:

Eligible beneficiaries - Medicaid is targeted at low-income individuals. Certain individuals, such as those receiving Aid to Families with Dependent Children are categorically eligible. Other low-income individuals who meet means tests (on income and assets) may also qualify, as well as the blind, disabled, and aged. Eligibility criteria vary from state to state.

Benefits - Again, varies from state to state, but many have drug formularies.

Copayment - Both the level and design of copayment requirements vary from state to state. Schemes include per-prescription charges, annual deductibles, coinsurance rates, etc. A number of states require some form of cost-sharing.

Medicare:

Eligible Beneficiaries - Person aged 65 or over, plus the disabled.

- Recently U.S. Congress acted to extend Medicare coverage to include prescription drugs. Currently, Medicare pays only for prescription drugs administered in the hospital or a skilled nursing facility, injections by physicians, and immuno-suppressive drugs furnished during the year after an organ transplant. Beginning in 1991, coverage for all outpatient prescription drugs, biologic agents, and insulin will be added. Beneficiaries will be required to pay an annual deductible of $600 and coinsurance rate of 50%. The deductible is set at $652 for 1992 with a coinsurance of 40%; in 1993 the coinsurance rate will fall to 20 percent.

<u>State Plans</u>

In addition to Medicaid, many states offer third party prescription programs for specific categories of needy citizens, funded by federal and/or state monies. Examples include renal disease programs and maternal child programs.

Sources: Abood (1984); Inglehart (1989).

Table 11: Drug Programs in Other Countries

	Eligible Beneficiaries	Benefits	Copayment
United Kingdom	All citizens	Rx drugs included on a limited list or "white list." In general, medicines used in the treatment of minor illnesses are excluded from coverage upon revision of program.	Fixed charge per Rx item. The copayment is waived for: all persons < 18 yrs, or up to 21 if a full-time student; old age pensioners (men 65+ & women 60+), expectant & nursing mothers, war & service disablement pensioners, recipients of Supplementary Benefit or Family Income Supplement & their dependents, pensioners with specific illnesses or disabilities. For those not exempt, prepayment certificates, which exempt the patient from any Rx charge for a year can be purchased.
France	All citizens	Rx drugs included on three mutually exclusive lists	Patients copay 60% of the costs of drugs listed as "minor treatments" and 30% of the cost of important "lifesaving" medicines. There is no copayment for drugs on the third list.
West Germany	All citizens who have not opted for private coverage. Note - all citizens are required by law to be enrolled in a health insruance plan	All Rx products except cough & cold products, mouth and throat septics, laxatives, & travel sickness remedies.	Patients pay a fixed charge per Rx.
Spain	All citizens. Participation is voluntary.	All market approved Rx drugs. Contraceptives, dietary products & OTCs not covered	Patients copay 10% of the cost of "essential" Rx & 40% of "nonessentail" Rx.

Table 11: Drug Programs in Other Countries (cont'd)

	Eligible Beneficiaries	Benefits	Copayment
Italy	All citizens	All products listed in Prontuario Terapeutico	Rx products determined to be "priority drugs" are exempt from any patient copayment. All other products listed in Prontuario Terapeutico are subject to a per-prescription charge that depends on the cost of the drug.
Denmark	All citizens	All drugs approved by the medical committee of the National Board of Health (NBH) and published in a special list.	Patients pay 25% of costs of drugs used in the treatment of certain specified diseases and 50% of the cost of most other drugs. The remainder are reimbursed only to individual patients upon application. The NBH determines the percentage of reimbursement in each of these cases.
Finland	All registered members of the Social Security System	All Rx & non-Rx medicines for which permission to market has been granted by the National Board of Health	There is no copayment on Rx considered "essential & effective" in the treatment of specific chronic diseases. In 1985 Patients paid 50% of the cost of drugs above FM 15. Note 1 FM = 0.2684 Cdn $

Table 11: Drug Programs in Other Countries (cont'd)

	Eligible Beneficiaries	Benefits	Copayment
Sweden	All persons registered in the Swedish public insurance office	All drugs approved by the National Board of Health & Welfare for marketing in Sweden & prescribed by physicians or dentists	There is no copayment for Rx used in the treatment of certain specified chronic diseases. All other medications are subject to a coinsurance rate that decreases as drug cost increases.
Norway	Individuals diagnosed with specified chronic diseases & persons prescribed expensive drugs for the treatment of nondesignated chronic diseases & approved on an individ basis.	1. Drugs & preparations considered "important" in the treatment of certain specified diseases. 2. Expensive drugs used in the treatment of nondesignated chronic diseases	There is no copayment on drugs in the category (1). For drugs in (2), beneficiaries pay a per-prescription charge up to annual limit on out-of-pocket expenditures.

V. ANALYTICS OF COPAYMENT MECHANISMS AND THE EVALUATION OF POLICY OPTIONS

The previous section illustrates the varied ways in which governments have designed drug benefit programs. The copayment policies varied in two basic dimensions: (1) that to which the copayment applied and (2) the type of copayment employed. The relevant question for developing policies related to drug coverage is: does it make a difference what copayment mechanism is chosen and to what it is applied, and if so, what are the important differences? In this section I explore some of the basic analytics of various copayment schemes, and then evaluate some of the more general policy options facing the ODB program, using specific criteria developed for evaluating public insurance programs.

A. Analytics Of Copayment Mechanisms

The survey of drug programs in Canada and other industrialized countries revealed that copayment mechanisms have been applied to: the dispensing fee, the drug cost only, specific drugs, drugs of a certain cost, or specific categories of drugs (e.g., essential, non-essential). This variety of features to which the copayment applies should not be taken to mean it matters little how the overall copayment scheme is designed. By its very nature, insurance changes the price of a good, thereby creating distortions, which lead to both desirable, intended effects and

undesirable, unintended effects. In designing any insurance (copayment) scheme, one cannot avoid creating incentives, both positive and negative; the trick is to design schemes for which the positive effects outweigh the negative. For example, even in the simplest of systems, which fully covers the cost of all prescription drugs listed in a formulary, a distortion is created between the price of drugs in the formulary and those not in the formulary. In certain instances, because of the price differential between formulary and non-formulary drugs an individual may request the stronger prescription medication when it is not needed. Though one cannot avoid such effects, one can be aware of the incentives being created.

Any scheme that includes differential levels of copayment among the drugs covered as a benefit, therefore, creates the potential for inappropriate substitution among drugs in the various categories. Constructing a copayment gradient, whereby the level of cost-sharing falls as the cost of a drug increases provides the incentive to utilize the more expensive drugs. Such a system may also provides perverse pricing incentives for the manufacturer since raising the price may lower the cost to a consumer. If the categories as "essential" and "unessential" can be clearly delineated, and there is little scope for substitution between the essential and non-essential drugs, different levels of cost-sharing for the two types of drugs may create few opportunities for undesirable substitution. But, if the two types of drugs cannot be clearly delineated, there is once again

incentive to substitute the drug with a lower level of cost-sharing when another may be more appropriate.

A copayment (either a fixed per-prescription charge or a coinsurance rate) applied to the dispensing fee will not create any incentives with respect to drug choice, but does provide incentive to obtain a larger quantity of drugs with each prescription, thereby reducing the number of prescriptions and the associated dispensing fees. Note, however, that if a coinsurance rate (rather than a fixed charge) is applied to either the total cost (drug and dispensing fee) or the drug cost alone, there is incentive to substitute less expensive for more expensive drugs. Though this may be desirable in those instances in which the choice is between a low-cost generic equivalent and a brand name drug, it may not be desirable in other instances in which the drugs are not equivalent.

This latter example highlights the importance not only of the "unit" to which the copayment applies, but also the exact type of copayment mechanism employed. The most common mechanisms have been fixed per-prescription charges, coinsurance rates, deductibles, and annual expenditure limits (caps). Most schemes are some combination of these.

In general, though a per-prescription charge does decrease utilization by increasing the cost of drugs to consumers, the consumer remains insensitive to either the dispensing fee or the drug cost. The main incentive provided is to reduce the number of prescriptions. This can be done by reducing the level of

utilization and/or by increasing the quantity per prescription. In contrast, a coinsurance rate that, on average, required the same out-of-pocket costs as a fixed per-prescription charge, provides incentive for the consumer to be sensitive to costs (because they pay a specified proportion of the cost). This was discussed above in reference to a coinsurance rate applied to either the total cost or just the drug cost. A coinsurance rate applied only to the dispensing fee is neutral with respect to drug cost, but provides incentive to seek the pharmacist with the lowest dispensing fee (other things equal). This is probably the most important distinction between fixed per unit charges and coinsurance rates: the former does not make the consumer sensitive to cost while the latter does. This creates the possibility that a carefully designed coinsurance provision can increase economic efficiency, a point discussed in more detail below.

A deductible can be thought of as applying a 100% coinsurance rate up to a certain level of spending. Above that limit the rate drops to less than 100%. An annual expenditure limit is similar except cost-sharing may be less than 100% below the limit, and is by definition 0% above the limit. Both, however, create different incentives for those whose expected utilization would place them below the deductible or the limit, and those whose expected utilization would cause their expenditures to exceed the deductible or the limit. If one knows, for example, that he or she is certain to exceed the annual limit (i.e., a high drug user)

there is no incentive to change behaviour because there is no way to reduce out-of-pocket expenditures at current utilization levels.

This short exposition has been intended to simply highlight some of the important issues in the design copayment mechanisms. The exact effects of a policy obviously depend on how the various features are combined. It is impossible to avoid creating incentives, both desirable and undesirable. As noted above, coinsurance rates have the potential to create more desirable incentives than fixed per-unit charges. In addition, it would appear that simplicity of design is a virtue. A simpler scheme is both easier administratively, has a lower chance of creating unforseen perverse side effects and reduces the amount of "gaming" that will occur by the individuals affected.

B. Evaluation Of Policy Options

With this background on some of the analytical aspects of copayment mechanisms, we can now turn to the evaluation of both cost-sharing policies and policies to address issues of access. The evaluation in this section will be performed at a rather general level, and is intended in part to describe criteria by which any policy (including those not discussed in this document) can be evaluated. Polices under consideration at this time relate to: (1) extending coverage to groups experiencing access problems; and (2) introducing some form of cost-sharing. Given

the present ODB program there are six generic options:

i) extend coverage, do not introduce cost-sharing

ii) extend coverage, introduce cost-sharing only for non-social assistance beneficiaries

iii) extend coverage, introduce cost-sharing for all beneficiaries

iv) do not extend coverage, introduce cost-sharing for all beneficiaries

v) do not extend coverage, introduce cost-sharing only for non-social assistance beneficiaries

vi) do not extend coverage; do not introduce cost-sharing (i.e., do nothing)

At this general level, exactly which groups of individuals coverage might be extended to, or the exact form of any copayment mechanism is not specified; in formulating specific policies these issues obviously must be addressed and will have an important impact on the ultimate effects of any policy.

Each of these generic options will be evaluated with respect to four objectives, or criteria, that have been identified for assessing public interventions in insurance markets (Evans and Williamson, 1978; Barer, Evans, and Stoddart, 1979). A proposed public insurance scheme (or any component of it) can be judged based on its effects on: (1) risk-sharing; (2) wealth transfers; (3) the level and pattern of utilization; and (4) economic efficiency. Each of these objectives will briefly be described, and the probable impact of each policy on that objective will be discussed.

1. Risk-Sharing

From the perspective of insurance principles, the primary motivation for insurance is risk reduction, through the pooling of the risks faced by a large number of individuals. If each of a number of risk-averse individuals faces uncertainty regarding the occurrence of an event that results in a large loss, by pooling their risks whereby each individual pays an actuarially fair premium[12] to insure against the event, each individual can be made better off. (For a more detailed discussion and a diagrammatic exposition, see Evans and Williamson, 1978.) That is, by incurring a small but certain loss (the premium) the individual removes uncertainty and the possibility of a large loss, while leaving expected wealth unchanged.

The magnitude of the benefits derived from the purchase of insurance, and the associated risk reduction depends on an individual's degree of risk aversion, the size of the loss, and the degree of uncertainty regarding occurrence of the loss. Other things equal: the more risk-averse an individuals is, the greater are the benefits of insurance; the higher the degree of

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[12] An actuarially fair premium is defined as one for which the premium is equal to the expected loss. The expected loss is simply equal to: (probability of loss) x (amount of loss). Hence, the actuarially fair premium for insuring against a $10,000 loss that will occur with a probability of 0.2 is $2,000.00. Because of administrative costs, in reality premiums are seldomly actuarially fair. But as long as the premium does not deviate too much from the actuarially fair premium, a risk-averse individual will be made better off though the purchase of insurance.

uncertainty, the greater are the benefits; and, the larger the loss, the greater are the benefits. The welfare gains of insurance obtained by risk-sharing are particularly trivial in the case of small, predictable (almost certain) losses.

Because for most people prescription drug expenses are either relatively small or relatively predictable, the benefits derived from the risk pooling associated with prescription drug insurance are probably not appreciable. Hence, although extending coverage increases the level of risk-sharing, and introducing any form of consumer copayment reduces risk-sharing, in evaluating each of the six policy options listed above these effects are likely to be small enough to be unimportant. Hence, the policies cannot be distinguished by this criteria.

2. Wealth Transfers

The introduction of, or change in, insurance is likely to result in wealth transfers among the affected individuals. These transfers may be deemed either desirable or undesirable by society. For example, the extension of insurance to a specific group of individuals with large needs and few resources, funded publicly with general tax revenue, would result in a transfer of wealth from the general population to a particular group of individuals and would likely be viewed positively; in contrast, the extension of insurance benefits to relatively well-off individuals, financed through a regressive payroll tax would be

viewed as resulting in undesirable wealth transfers.

Effecting a wealth transfer was probably one of the primary motivations for the introduction of the ODB program fifteen years ago. The program diverts resources from the general tax-paying population and makes them available to those without the resources for the purchase of needed prescription drugs. To the extent that some individuals over age 65 are wealthy, such coverage may dilute the positive wealth transfer accomplished by the program, but, given that the elderly, on average, are heavy prescription drug users, such categorical coverage may have been an easy way to transfer resources to a large group of high users.

Wealth transfer may be a primary motivation for extending coverage to individuals with low incomes, chronic diseases or extraordinary drug expenses. Many such individuals do not have sufficient resources to obtain needed drugs, and by extending coverage, such resources can be made available. To the degree that such an extension can be targeted to those with access problems, the reform would result in what would probably be considered a desirable wealth transfer from the societal perspective. Such a judgment, however, depends upon from whom the funds are drawn to provide these new benefits.

The same considerations apply when evaluating copayment provisions: what are the resources of those facing the copayment provisions and to what use are the freed up government resources put? The exact design of the copayment mechanism (i.e., per-prescription fixed charge, coinsurance rate) is of less importance

than the groups to which it applies and its magnitude. Imposition of cost-sharing on individuals receiving social assistance, for example, would result in a transfer from low-income individuals to the government (and therefore, the general public through the tax system). To the degree that copayment can be limited to individuals with sufficient resources to bear the burden of cost-sharing, the wealth effects may not be seen as undesirable. A copayment policy that places a cap on a person's annual expenditures also reduces the possibility of any individual experiencing hardship as a result of the copayment provision.

Hence, based on wealth transfer effect, (vi) above obviously has no effect relative to the status quo; (iii), (iv), have both positive and negative components, so it is unclear what the net effect would be; and (v) has the potential for favorable effects. Most likely to have a positive effect are (i) and (ii).

It should also be noted that the extension of benefits or the introduction of copayment provision may also effect a transfer of wealth among suppliers, consumers and the government. The extent and direction of such transfers will vary with pharmacy reimbursement policies and the exact design of the copayment provision. For example, a coinsurance rate applied to the dispensing fee, which induces price competition among pharmacies, will result in a transfer from pharmacists to consumers and the government. Or, reducing the price to consumers to zero, but failing to incorporate mechanisms to control the price reimbursed may result in price increases, and transfers from the government

to suppliers.

3. Effects of the Level and Pattern of Utilization:

By altering the price the consumer pays for an insured good or service, insurance can have quite dramatic effects on both the overall level of utilization and the pattern of utilization. An ideal insurance program would increase the utilization of needed, appropriate services and decrease the utilization of unneeded, inappropriate services. Limitations on the availability of the information required for such insurance, and in the ability to design the appropriate mechanisms even if such information were available, mean that all existing programs fall short of this goal. In most instances, simply lowering the price of a service or good increases utilization appropriate and inappropriate alike; similarly, introducing consumer cost-sharing generally reduces utilization, appropriate and inappropriate alike. No approved drug is appropriate in all situations or inappropriate in all situations; the appropriateness of the utilization is situation specific. Because it is difficult (and costly) to design an administratively feasible copayment mechanism that is situation specific, commonly used mechanisms cannot discriminate between appropriate and inappropriate utilization. The problem of inappropriate utilization is best addressed though methods to affect physician prescribing behavior.

This point cannot be overemphasized, particularly with respect to the introduction of consumer cost-sharing, which is

often advocated as a method of reducing inappropriate, unnecessary utilization. There is strong evidence that for both medical services generally and for prescription drugs, the introduction of consumer cost-sharing reduces both appropriate and inappropriate utilization. In the case of medical services this reduced level of utilization has also been linked to reductions in health status, particulary among lower-income groups (Manning et al., 1987 Brooket et al., 1983; Lurie et al., 1984; Lurie et al, 1986). The magnitude of the problem obviously varies with the burden of the cost-sharing that is required, but the evidence is clear.

To the degree that the copayments can be limited to those with sufficient resources, and the magnitude of the cost-sharing can be limited through such mechanisms as annual expenditure caps, the unintended deleterious side effects can be reduced and must be balanced against the reductions in inappropriate utilization.

If the extension of coverage can be targeted at groups who are currently under-utilizing prescription drugs because of financial barriers, the net effect may be both an increase in utilization, and a more appropriate pattern of utilization within the population.

With a well designed policy, it would appear that (i), (ii) are likely to be judged favorable with respect to their effects on the level and pattern of utilization, while (iii) and (v) are ambiguous in their effects, and (iv) would be judged less favorably.

4. Economic Efficiency

This last criteria relates to how the program or policy will affect the economic efficiency with which the affected markets operate. In the case of prescription drugs the two most important markets are the delivery system, e.g., pharmacies, and the drug manufacturing sector.

Given the current structure of the ODB program (e.g., non-universal coverage, the cost-definition used and reimbursement regulations) the extension of benefits to specific subgroups of the population with a particular access problems is unlikely to affect the efficiency with which either the delivery system or manufacturing and wholesale distributing sectors operate.

The introduction of an appropriately designed copayment scheme, however, does have the potential to increase the economic efficiency with which these sectors operate. For example, the introduction of a coinsurance rate on the dispensing fee (and allowing pharmacists to set the fee), has the potential to increase competition among pharmacies in this dimension of pricing, thereby increasing economic efficiency. Such a policy also provides incentive to increase the amount of drugs obtained in each prescription, so as to eliminate extra dispensing fees. This latter may also result in increased efficiency. (Though potential negative side-effects, such as wastage, may also occur.) In instances in which approved, equivalent generic substitutes exist, a copayment that is linked to the purchase of the generic

equivalent may increase competition among generic and brand-name manufacturers, resulting in increased efficiency in that sector. Hence, copayment policies have the potential to have a positive impact on economic efficiency. But, as Evans and Williamson (1978) note, it is essential that the consumer be made price sensitive only with respect to those aspects of a service or good for which they can judge quality, e.g., the dispensing fee rather than the drug itself. Introducing coinsurance in dimensions in which the consumer has neither the experience nor the knowledge to judge the product can result in non-optimal consumption patterns. In general then, (i) and (vi) would produce no changes in economic efficiency, and (ii), (iii), to (iv) and (v) all have the potential to do so.

C. DISCUSSION

The analysis in the section above was conducted at a fairly general level out of necessity -- the exact effects of any policy obviously depend upon who is affected, how the specific provisions of the policy are designed and implemented, and the level at which a number of policy variables are set. But some broad conclusions emerge.

Based on these four criteria, the extension of benefits to specific, targeted groups of individuals experiencing difficulty obtaining needed prescription drugs under the current ODB program has favorable effects. A policy of extending benefits to these

groups of individuals will have little impact on risk-sharing and the efficiency of the prescription drug market, but will be likely to produce favorable wealth transfers and improve the pattern of prescription drug utilization. As one moves away from these targeted groups, and extends coverage to the population more generally, such as through a universal program, these favorable effects become diluted and it is unclear if such a policy could be justified on these grounds.

The case for the introduction of consumer cost-sharing through copayment provisions is less clear-cut. Like the extension of benefits, a copayment scheme is likely to have only minimal effects on the benefits derived from risk-pooling. The magnitude of the wealth transfers that accompany cost-sharing depend on the amount of cost-sharing imposed and the number of people to whom it applies (and their associated utilization), but the direction of the transfer depends only on whom the copayments are imposed, and to what use the funds are put. A scheme that applies to all beneficiaries, both those on social assistance and the non-wealthy elderly, is more likely to have negative effects overall. A scheme that limits the copayment to beneficiaries that have sufficient resources to bear the costs of the copayment provisions would be more likely, on net, to have positive wealth transfer effects.

Similarly, the effects of copayments on the level and pattern of drug utilization are mixed. Inappropriate utilization -- a serious problem in the drug area -- will in all likelihood

decline; but so will appropriate utilization. Again, designing a scheme so cost-sharing falls only on those individuals with sufficient resources, and then limiting their liability by the imposition of an annual expenditure cap, may mitigate these problems, but will not eliminate them. A copayment scheme imposed on low-income individuals will almost surely have a negative impact on the level and pattern of utilization.

Copayment provisions also have the potential to have a positive impact on the efficiency with which the prescription drug delivery system operates but it is unclear how important these effects are.

On net then, a carefully designed, well targeted copayment scheme can result in desirable wealth transfers, can improve economic efficiency, and may have only minor negative effects on the pattern and level of utilization.

Turning to the six generic options listed above (i) and (ii) come out most favorably by these criteria; (iii) and (v) have mixed effects; (iv) comes out least unfavorably; (vi) obviously has no effects relative to the status quo.

VI. SIMULATED EFFECTS OF COST-SHARING ON UTILIZATION AND EXPENDITURES

As discussed above, the introduction of copayment provisions changes both the level and pattern of utilization of prescription drugs. The ultimate effect of a policy depends on the exact type of copayment that is implemented, the level of cost-sharing required, and the responsiveness of consumers to the increase in the price they must pay for prescription drugs. In this section, estimates of the effect of fairly common copayment mechanisms on the level of drug utilization and on expenditures by the ODB program and its beneficiaries are presented.

To perform the simulations two types of information were required: detailed data on the utilization of prescription drugs by ODB beneficiaries and the associated expenditures, and estimates of consumer responsiveness to changes in the cost of drugs under alternative copayment mechanisms. Although the former data were available from the Ontario Ministry of Health, the unavailability of estimates of consumer responsiveness under alternative copayment schemes limited the analysis to only two types of policies, a flat per-prescription charge with no limit on consumer liability and a coinsurance rate applied to the dispensing fee with an annual expenditure cap, much like the type of plan currently used in British Columbia.

The key piece of information for predicting the utilization effects of various copayment policies is the estimate of consumer

responsiveness to price changes; that is, an estimate of how much utilization will fall when the price increases -- in economic jargon, the elasticity of demand.[13] The validity of the predictions stands or falls on the reliability on this estimate. No elasticity estimate exists for residents of Ontario, or Canada as a whole. Furthermore, because the response of consumers may differ by age group (e.g., elderly/non-elderly), ideally one would want separate estimates for relevant population subgroups.

Given the time, resources, and data constraints of this research project, it was not possible to develop such estimates based on Canadian data. Therefore, the simulations were conducted using elasticity estimates obtained from drug utilization studies conducted in the U.K. and the U.S. Because a point estimate is required for the simulations, sensitivity analysis was performed around the best point estimate, and results are presented under assumptions of low, medium, and high levels of response. In this way, a range in which the actual utilization and expenditures effects are likely to fall is presented. But it must be kept in mind that the figures presented are estimates, and although every attempt was made to base them on the best information, they are only as valid as the underlying data and assumptions. Hence they

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[13] The elasticity of demand is defined as

$$\frac{\%\text{ change in quantity demanded}}{\%\text{ change in price}}$$

If the elasticity is greater than 1.0, demand is said to be elastic, if it is less than 1.0, demand is inelastic.

should be viewed as "ballpark" figures that indicate the rough magnitude of the effects.

A. Consumer Responsiveness to Changes in the Costs of Obtaining Prescription Drugs

A number of studies have examined the effect of changes in the price of drugs on utilization and expenditures. The most recent that have explicitly estimated price elasticities of demand are based on the U.K. experience. The U.K. has provided an excellent setting in which to study this question. Since 1979 under the Thatcher government, the per-prescription charge to consumers has risen every year, and has increased in real terms by several hundred percent. Estimates derived from U.K. data have the advantage that like in Canada, physician services, which are required for obtaining a prescription, are available free of charge. Therefore, in both countries the cost of obtaining drugs is limited to those costs associated with the actual purchase. A disadvantage is that because the elderly and those on social assistance are exempt from patient charges, the elasticity estimates are based on the utilization of the non-elderly, non-poor population, who may respond differently to the price changes than the poor or elderly. However, no other estimates are available.

Four studies, Lavers (1983), O'Brien (1982; 1989), and Ryan and Birch (1989) have estimated elasticities of demand for prescription drugs. Each analysis applied multivariate regression

to aggregate utilization data for the U.K. to obtain the elasticity estimates. Although the exact time period studied and variable definitions differed somewhat across the studies, with the exception of O'Brien (1989), quite consistent estimates were obtained. Lavers, Ryan and Birch, and O'Brien (1982) each obtained elasticity estimates in the interval -0.1 to -0.20; that is, a 10% increase in the price to consumers results in a decrease in utilization of between 1% and 2%. O'Brien (1989), obtained slightly higher estimates, ranging from -0.23 to -0.64. Even including the results of O'Brien (1989), this is an amazingly small range of values across four different studies, and are consistent with elasticity estimates obtained in analysis of health care utilization in general (e.g., Manning et al., 1987). Therefore, the simulations presented in this report are based on the following assumptions regarding the elasticity of demand for prescription drugs: 0.2 is assumed as the best paint estimate, 0.1 is assumed for a conservative estimate, and 0.4 is assumed as a high estimate.

The elasticity estimate is useful for analyzing changes in the price consumers pay when it is initially non-zero, but cannot be used to assess the impact of the introduction of cost-sharing into a plan in which consumers currently face a price of zero. Recalling the definition of elasticity - the percentage change in utilization divided by the percentage change in price - any change in price from zero implies an infinite percentage increase, and the elasticity estimate cannot be applied. It is also possible

that consumers respond differently to the introduction of a copayment than to an increase in an already existing copayment. Therefore, one needs a separate estimate of the effect of the introduction of the copayment.

The estimate of the effect of the introduction of a copayment policy is derived from two studies: Birch (1986) and Leibowitz et al. (1985). Leibowitz et al. analyzed the changes in utilization associated with increasing the level of consumer cost-sharing from 0% to 25% of the total prescription cost. Their results indicate that prescriptions per capita were approximately 19% lower for those who faced the 25% coinsurance rate than for those who received drugs free. Given that the average cost per prescription was approximately $10.50 (Canadian), this would suggest that the introduction of a per-prescription copayment of $2.50 would lead to a 20% reduction in prescriptions-per-capita. Two important aspects of the study, however qualify any generalization of this result to the ODB program: First, the increase in the copayment rate did not apply only to prescription drugs - it applied to all medical services, including physician visits. Because a physician visit is required to obtain a prescription, part of the decreased utilization is likely due to a decrease in physician visits. Therefore, the 20% figure overestimates of the response that would occur as a result of the introduction of such a copayment in the ODB program. Secondly, the group studied was once again a non-elderly population. Birch (1986) examined the effect of the change in real per-prescription

charge in the U.K. from 0.20 pound (= 38 cents Canadian) to 0.91 pound (= $1.75 Canadian) during the period 1979-1983. Admittedly this is not a case in which a copayment was introduced, but the copayment changed from a negligible level which had been constant (in nominal terms) for a number of years, to a substantial charge. The analysis indicated that prescriptions per capita fell 7.5% as a result of this increase in patient charges. For a number of reasons this is likely a conservative estimate of what the introduction of a $1.75 charge would be in the ODB program: (1) this was the result not of the introduction of the charge, but of an increase from a negligible level; (2) the increase occurred over a period of four years rather than all at once; (3) the method of calculation suggests that it is a conservative estimate, even for the U.K.

Based on these two studies, a conservative estimate of the response to the introduction of a $2.50 per prescription charge would be a 10% reduction in utilization, and a generous estimate would be a 20% reduction.

For the simulations, the 10% and 20% figures were used to estimate the initial effect of introducing a $2.50 per prescription charge; the effects on utilization of increases above the $2.50 level were then based on the elasticity estimates of -0.1, -0.2, and -0.4.

B. SIMULATIONS

1. Fixed Per-Prescription Charge

The first simulation assessed the effects of introducting a fixed per-prescription charge only for the non-GAINS elderly population. That is, only non-social assistance beneficiaries of the ODB program would be liable for the charge. Further, no limit is placed on consumer out-of-pocket costs. The simulations are performed for per-prescription charges of $2.50, $3.00, $4.00 and $5.00. Details of the calculations are presented in Appendix 2. Table 12 summarizes the results. For each level of the charge, an estimate of the change in utilization is presented assuming low, medium and high levels of response, and the associated implications for total drug expenditures, ODB program expenditures and consumer expenditures are listed. There are two sources of reduced ODB expenditures: (1) for each prescription claim filled, ODB program expenses are reduced by the amount of the per-prescription charge; and (2) because consumers must pay the charge, utilization is reduced, so fewer claims are filed. The latter is a pure utilization effect while the former simply shifts costs to the consumer, hence consumer expenditures increase.

Each row in the table represents the predicted effects of the indicated per-prescription charge; the different rows associated with each charge indicate the predicted effects under alternative

Table 12: Simulated Utilization and Expenditure Effects of Per-Prescription Copayment for the Non-GAINS Elderly Population

Per Rx Copayment	Assumed Utilization Response	% Reduction in Rx/Active Beneficiary	Decrease in Total Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000 000)	Decrease in OOB Expenditures ($ 000 000)	Decrease in OOB Expenditures as % of 1988 Expenditures
$2.50	Small[a]	10.0	37.8	51.9	89.7	19.8
	Large[b]	20.0	75.6	46.1	121.7	26.9
$3.00	Small[c]	11.8	44.6	50.8	95.5	21.1
	Medium[d]	21.6	81.6	45.2	126.9	28.1
	Large[e]	26.4	99.8	42.4	142.2	31.5
$4.00	Small	14.7	55.6	49.2	134.3	29.7
	Medium	24.2	91.4	43.7	161.4	35.7
	Large	36.1	136.5	36.8	195.5	43.3
$5.00	Small	16.9	63.7	47.9	159.6	35.3
	Medium	26.1	98.5	42.6	183.8	40.7
	Large	42.5	160.7	33.1	227.0	50.2

[a] - 10% response assumed
[b] - 20% response assumed
[c] - 10% response to $2.50; elasticity of 0.1 assumed above $2.50
[d] - 20% response to $2.50; elasticity of 0.1 assumed above $2.50
[e] - 20% response to $2.50; elasticity of 0.4 assumed above $2.50

assumptions regarding the responsiveness of consumers to the copayment. The first column lists the percentage reduction in prescriptions per capita compared to the current level of 28.7 for the elderly beneficiaries. The decrease in ODB program expenditures is decomposed into its constituent parts: the increase in consumer expenditure (from zero currently) represents the costs shifted to beneficiaries, and the decrease in total expenditures represents the effect of reduced utilization overall. Hence, the figures in columns 4 and 5 sum to those in column 6.

The non-GAINS elderly are the largest beneficiary group, so the effects of the per-prescription charge on ODB expenditures is potentially quite large. Even with a charge of $2.50 per prescription and the small level of response assumed, ODB expenditures are expected to fall by almost 20%; under the $5.00 charge and the highest level of response, expenditures are predicted to decrease by approximately 50%. Under the assumed low level of response, the ODB savings are split almost evenly between cost-shifting to beneficiaries and reductions in total expenditures for drugs (e.g., 44.6 and 50.8); at the medium and high level of response, proportionately more of the ODB savings occur as a result of deceased utilization. This occurs because the lower the elasticity, the smaller the reduction in utilization associated with a given copayment level, and consequently, the higher are beneficiary out-of-pocket costs. Clearly a substantial proportion of ODB savings accrue by cost-shifting.

These estimates are consistent with crude projections based

on New Brunswick's early experience with the recently introduced $6.34 per-prescription charge for seniors in its program (New Brunswick, 1989). The predicted savings under the large response are perhaps unrealistically large suggesting that the predictions under the small and medium assumptions are closer to the truth.

2. Coinsurance Applied to Dispensing Fee, with Annual Limit

The second simulation predicts the effects of introducing a cost-sharing scheme whereby the non-GAINS elderly pay a specified percentage of the dispensing fee, but once an individual's expenditures reach a specified annual limit, additional prescriptions can be obtained free of charge. The simulation is performed for three coinsurance rates and two annual expenditure limits, leading to six different coinsurance rate and limit combinations. Under this plan, only certain beneficiaries will reach the annual expenditure limit. If an individual knows at the start of the year that he/she is likely to reach the limit, then he/she may not change behaviour at all, because it will have no effect on out-of-pocket costs. Therefore, the simulations are repeated under three alternative assumptions as to how these high drug users respond: (1) no response - utilization is identical to that before the copayment plan; (2) they respond at one-half the rate of low-users who do not reach the cap; and (3) they respond at the same level as those low-users who do not reach the cap. Again, this is done to provide bounds for the likely response -

the minimal response is no change and the maximum would be the same as those below the cap.

Currently the dispensing fee for ODB beneficiaries is set in negotiations between the Ministry of Health and the Ontario Pharmacy Association. In order for the coinsurance rate to de facto be anything than a fixed per-prescription charge, the pharmacists would have to be free to set the dispensing fee. Making the consumer liable for a specified percentage of the fee should induce competition among pharmacies, reducing the average dispensing fee. The simulations were conducted under the conservative assumption, however, that the average dispensing fee does not change from its current level of $6.32.

The results of the simulations are summarized in Table 13. These results tell a story very similar to those in the previous simulations, because the magnitudes of the copayments evaluated are similar. But in this instance ODB savings are generally less because the annual cap imposes limits on the amount of costs that can be shifted to beneficiaries. The variation in ODB savings associated with each coinsurance rate/limit combination under the three assumptions (conditions 1-3 in Table 13) regarding the response of those whose expenditures would exceed the limit is quite small at the 25% and 50% rates, and is only appreciable at the 75% rate. As expected, the savings are greatest under the assumption of full response by all beneficiaries facing the copayment.

The basic message of these simulations is that under plausible assumptions regarding the responsiveness of consumers to cost-sharing, ODB program expenditures are predicted to decrease substantially - from 20% - 30%. Not surprisingly, a substantial burden of this saving will fall on beneficiaries in the form of increased out-of-pocket expenditures. Once again it should be emphasized that the simulations do not tell us anything about the appropriateness of the decreases in utilization or whose utilization falls. The simulations simply indicate what might happen to aggregate utilization in response to the introduction of cost-sharing.

Table 13: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINs Elderly Population

Condition 1 - Assume no utilization response for individuals whose utilization would put them above the annual expenditure limit

Copayment	Annual Expenditure Limit	Assumed Utilization Response	% Reduction in Rx/Active Beneficiary	Decrease in Total Expenditures ($ 000 000)	Increase in Beneficiary Expenditures ($ 000 000)	Decrease in ODB Expenditures ($ 000 000)	Decrease in ODB Expenditures as % of Current Expenditures
25% of dispensing fee	$100	Small[a]	4.2	16.3	40.3	56.6	12.5
		Large[b]	13.2	50.1	37.0	87.1	19.3
	$200	Small[a]	4.9	18.0	37.9	55.9	12.4
		Large[b]	14.6	55.4	34.2	89.6	19.8
50% of dispensing fee	$100	Small[c]	8.0	30.2	69.6	99.8	22.1
		Medium[d]	13.9	52.8	65.3	118.0	26.1
		Large[e]	18.1	67.9	62.4	130.2	28.8
	$200	Small	11.1	41.9	74.8	116.7	25.8
		Medium	19.5	73.4	68.7	142.1	31.4
		Large	25.1	94.3	64.7	159.0	35.2
75% of dispensing fee	$100	Small	8.4	31.3	85.4	116.7	25.8
		Medium	12.5	47.3	80.8	128.1	28.3
		Large	20.9	78.6	71.7	150.3	33.3
	$200	Small	10.1	38.5	118.9	157.5	34.8
		Medium	15.3	58.2	113.3	171.4	37.9
		Large	25.4	96.7	102.1	198.8	44.0

[a] - 5% response assumed
[b] - 10% response assumed
[c] - 10% response to $2.50; elasticity of 0.1 assumed above $2.50
[d] - 20% response to $2.50; elasticity of 0.1 assumed above $2.50
[e] - 20% response to $2.50; elasticity of 0.4 assumed above $2.50

Table 13: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINs Elderly Population *(cont'd)*

Condition 2 - Assume response by individuals whose utilization would put them above the cap is equal to 1/2 the response of individuals below the cap

Copayment	Annual Expenditure Limit	Assumed Utilization Response	% Reduction in Rx/Active Beneficiary	Decrease in Total Expenditures ($ 000 000)	Increase in Beneficiary Expenditures ($ 000 000)	Decrease in ODB Expenditures ($ 000 000)	Decrease in ODB Expenditures as % of Current Expenditures
25% of dispensing fee	$100	Small	4.5	17.4	40.3	57.7	12.8
		Large	14.3	53.4	37.0	90.5	20.0
	$200	Small	4.9	18.2	37.9	56.1	12.4
		Large	15.0	56.0	34.2	90.3	20.0
50% of dispensing fee	$100	Small	10.1	38.8	69.6	108.4	24.0
		Medium	18.1	68.1	65.3	133.4	29.5
		Large	23.3	88.0	62.4	150.4	33.3
	$200	Small	11.8	44.7	74.8	119.4	26.4
		Medium	20.9	78.2	68.7	147.0	32.5
		Large	26.5	100.7	64.7	165.4	36.6
75% of dispensing fee	$100	Small	12.9	48.3	85.4	133.7	29.6
		Medium	19.5	73.7	80.8	154.5	34.2
		Large	32.8	124.0	71.7	195.7	43.3
	$200	Small	13.6	51.8	118.9	170.7	37.8
		Medium	20.9	78.9	113.3	192.1	42.5
		Large	34.8	132.3	102.1	234.4	51.9

Table 13: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINS Elderly Population (cont'd)

Condition 3 - Assume Identical Response by All Individuals

Copayment	Annual Expenditure Limit	Assumed Utilization Response	% Reduction in Rx/Active Beneficiary	Decrease in Total Expenditures ($ 000 000)	Increase in Beneficiary Expenditures ($ 000 000)	Decrease in ODB Expenditures ($ 000 000)	Decrease in ODB Expenditures as % of Current Expenditures
25% of dispensing fee	$100	Small	5.0	18.4	40.3	58.8	13.0
		Large	15.0	56.6	37.0	93.7	20.7
	$200	Small	5.0	18.4	37.9	56.3	12.5
		Large	15.0	56.6	34.2	90.9	20.1
50% of dispensing fee	$100	Small	12.5	47.4	69.6	117.0	25.9
		Medium	22.0	83.0	65.3	148.3	32.8
		Large	28.2	106.7	62.4	169.1	37.4
	$200	Small	12.5	47.4	74.8	122.2	27.0
		Medium	22.0	83.0	68.7	151.7	33.6
		Large	28.2	106.7	64.7	171.4	37.9
75% of dispensing fee	$100	Small	17.1	64.5	85.4	149.9	33.2
		Medium	25.8	97.5	80.8	178.2	39.4
		Large	42.9	162.0	71.7	233.7	51.7
	$200	Small	17.1	64.5	118.9	183.5	40.6
		Medium	25.8	97.5	113.3	210.7	46.6
		Large	42.9	162.0	102.1	264.1	58.4

VII. DISCUSSION AND OPTIONS

A. Resolving Problems of Access

For most residents of Ontario, a high proportion of the costs of prescription drugs are paid by third party insurance. Though detailed data on the depth and breadth of private third party coverage are not available, evidence suggests that most individuals employed full-time receive drug coverage as a fringe benefit of employment, and that the cost-sharing provisions, on average, are small. Hence, for most individuals employed full-time (and their dependents) the current system of private third party coverage would appear to be providing assess to needed prescription drugs. There is little reason for considering a major reform of the ODB program to proved coverage for these residents, for example, by making the program universal.

The low-income, "working poor" - those with just enough income to disqualify them for public assistance programs but who are employed in jobs that do not provide third party insurance as a fringe benefit - are a vulnerable group that has experienced access problems in the past. The recently implemented reform by the Ministry of Community and Social Services, which created a buffer zone whereby individuals ineligible for Family Benefits or General Welfare can still receive drug benefits, will increase access to prescription drugs for this group of residents. It is not known how many people will be affected by this reform, but it

is clearly a positive step towards ensuring access for low-income individuals without other resources. At this time, it would seem prudent to simply monitor the effect of this reform in meeting the needs of low-income, non-social assistance residents. If a future evaluation concludes the program has not been effective, the buffer zone may have to be modified or alternative policies considered. One option might be to offer optional coverage under ODB for a small premium with specified cost-sharing. Essentially, this would fill the gap in the market caused by the general in availability of reasonably priced individual plans from private third party insurers. Such a policy would also address the needs of self-employed individuals who do not currently have coverage.

The final groups of residents is those with chronic diseases, particular medical conditions, or disabilities that require expensive drug therapy. The Inquiry has already received briefs from a number of organizations representing individuals with various conditions. This study further tried to obtain information on the number of individuals and the drug costs associated with five conditions. There is much anecdotal evidence of access problems for individuals with disabilities, diabetes, kidney disease, multiple sclerosis, arthritis, and certain types of cancer, for instance; but there is little systematic, high quality data on the extent of the problems. Specific problems have surfaced - vitamins for dialysis patients, immuno-suppressant drugs for kidney transplant recipients, syringes for diabetics - but little information upon which to make recommendations.

Except for these examples, this research has not been able to obtain data upon which specific recommendations can be made. There appears to be a need, but secondary data collected by organizations representing these patients are not going to distinguish which groups have the most severe problems. An approach for obtaining the necessary data would be to draw up a list of conditions that are being considered for possible extension of coverage. Then select a random sample of individuals for each condition, and examine utilization and out-of-pocket costs. Decisions regarding extension of coverage could then be based on these primary data.

Developing a standard, systematic method for reviewing the claims of individuals specific conditions would be useful for the future as well. Overtime, as new drugs become available, these issues are going to surface periodically. Having a mechanism in place to respond will help ensure fairness in decisions regarding coverage.

In responding to the needs of such individuals, two approaches could be taken: (1) extend coverage to specific disease categories, as was recommended for thalassemia and cystic fibrosis patients; or (2) provide coverage to all individuals requiring specific drugs associated with the various medical conditions. The former approach may be administratively easier, and would require fewer modifications over time as new, alternative drug therapies are developed for patients with these conditions.

B. Introduction of Cost-Sharing

The simulations indicated that introducing consumer cost-sharing has the potential to reduce ODB program expenditures substantially - on the order of 20% - 30%. But once again it should be emphasized that these savings come at a price of undesirable side effects in the form of some reduced appropriate utilization.

If cost-sharing is desired, these negative effects can be reduced by exempting low-income, social assistance beneficiaries from any charges. The charges should be targeted at those groups with adequate resources to bear them. This would primarily be the elderly not receiving GAINS.

As noted above, a coinsurance rate is more desirable than a simple per-prescription charge. Applying the copayment to the dispensing fee, and letting pharmacists set their own fees, has the potential of inducing price competition and increasing saving to both the ODB program and consumer. There is little evidence upon which to judge how important the effects on the level of dispensing fees would be, but even if these are minimal or non-existent, by applying the cost-sharing to the non-drug component of the total cost, it reduces the possibility of drug decisions being made on the basis of the copayment. As noted above, most consumers are not well enough informed to judge the appropriateness of various drugs, and efforts to improve the appropriateness of prescriptions should be targeted at

physicians. Finally, by imposing an annual expenditure cap, consumer out-of-pocket expenditures can be limited.

Such a scheme would be almost identical in structure to the plan currently used for the elderly in British Columbia. One slight difference is that in B.C., rather than exempting those on GAINS, they simply increased the GAINS allowance by the amount of the expenditure cap. In this way, no beneficiary was made worse off with respect to annual income, and low drug users on GAINS were actually made better off. This is an alternative to exemption as a way of ensuring that cost-sharing does not reduce the resources available to low-income individuals. One disadvantage of this approach is that, although during the course of a year the total income available has not fallen (because of the increase in GAINS), at particular times cash-flow problems may create financial barriers. By simply exempting low-income individuals this problems is avoided.

Such a scheme has the advantages of: being relatively simple, not introducing price distortions within the formulary by applying different coinsurance rates to different categories of drugs, providing the consumer incentive to be sensitive to the level of the dispensing fee, and limiting consumer out-of-pocket, and ensuring that cost-sharing falls primarily on those with adequate resources.

If cost-sharing is introduced, it is imperative that the ODB program modify its data systems to permit drug utilization review. Unless the data systems are changed, it will be impossible to

evaluate the effects of the cost-sharing policy. For proper drug utilization review, and for the effects of cost-sharing (or any other policy) to be evaluated it is necessary that all prescriptions filled by program beneficiaries be recorded, and that utilization profiles for each beneficiary (as well as prescription profiles for physicians) be easily constructed. Furthermore, the ability to link drug utilization data with physicians' services and hospital utilization data collected by the Ontario Health Insurance Program is necessary to assess the impact of policies on overall health care utilization and expenditures. Such reforms should be seen as a pre-condition of introducing cost-sharing.

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Appendix 1: Data Sources

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Appendix 2: Simulated Utilization and Expenditure Effects of Per-Prescription Copayment for the Non-GAINS Elderly Population

All calculations are based on data provided by the Ontario Drug Benefit Program of the Ministry of Health, for the 1987-88 fiscal year. The data, by beneficiary category (elderly, Family Benefits, General Welfare, etc.), include: number of active beneficiaries, number of prescriptions, expenditures on drugs, expenditures on dispensing fees, and total expenditures. The data from ODB aggregate the elderly receiving GAINS and the elderly not receiving GAINS. Because the copayment only applies to the non-GAINS elderly, it was necessary to estimate the number of all elderly beneficiaries receiving GAINS. From data provided by Ministry of Revenue and Health and Welfare Canada, it was estimated the GAINS recipients comprise 16.4% of persons aged 65 and over. Therefore, we applied the figure to the ODB data on the number of active beneficiaries aged 65 and over to obtain the number of non-GAINS ODB active beneficiaries. Because we could not get the utilization data specific to these individuals, we had to further assume that the utilization by GAINS and non-GAINS recipients was the same (28.7 prescriptions per active beneficiary). One further assumption is that the cost per prescription will not change after the per-prescription charge is introduced.

The effects of introducing a per-prescription copayment of differing levels were calculated in the following way:

$2.50: Based on Birch (1986) and Leibowitz et al. (1985), the low response was assumed to be a 10% reduction in prescriptions per active beneficiary, and a high response was assumed to be a 20% reduction.

$3.00-$5.00 For the introduction of per-prescription charges greater than $2.50, the calculations were done in 2 steps. For the first $2.50, the same assumptions as above were used, that is, the $2.50 would result in an

initial reduction of either 10% or 20%. The effect on utilization of increases above $2.50 were based on elasticity estimates, where an elasticity of -0.10 was assumed for a low level of response, an elasticity of -0.20 was assumed as the "best" estimate, and an elasticity of -0.40 was assumed for a high level of response. These results produced 6 estimates for each copayment level.

e.g., $3.00 per prescription charge:

	Prescriptions per Active Beneficiary
No charge (actual current utilization)	28.7
Effect of first $2.50 of charge	
(low response = 28.7 * (-0.10) = -2.9)	25.8
(high response = 28.7 * (-0.20) = -5.7)	23.0

Using the figures of 25.8 and 23.0 as base values, the effect of increases beyond $2.50 were then calculated. The increase to $3.00 represents an increase of 20% in the charge, therefore, using the assumed elasticities of -0.10, -0.20, and -0.40, the results are:

	Prescriptions per Active Beneficiary
(1) under assumption of initial 10% reduction:	
low response = (25.8 * (0.20 * -0.10) = -0.5)	25.3
medium response = (25.8 * (0.20 * -0.20) = -1.0)	24.8
high response = (25.8 * (0.20 * -0.40) = -2.0)	23.8
(2) under assumption of initial 20% reduction:	
low response = (23.0 * (0.20 * -0.10) = -0.5)	22.5
medium response = (23.0 * (0.20 * -0.20) = -0.9)	22.1
high response = (23.0 * (0.20 * -0.40) = -1.9)	21.1

Using theses levels of utilization, it was possible to calculate the decrease in the total expenditures on drugs, the decrease in ODB program expenditures, and the increase in consumer expenditures using the following formulas.

increase in consumer expenditures using the following formulas.

(1) Decrease in total expenditures:

B88 * CPP88 * PPB88 - B88 * CPP88 * PPB88CP

(2) Decrease in ODB program expenditures:

B88 * CPP88 * PPB88 - B88 * CPP88CP * PPB88CP

(3) Increase in consumer expenditures:

B88 * CP * PPB88CP

Where:
- B88 = # of non-GAINS elderly beneficiaries in 1988
- CPP88 = cost per prescription in 1988
- PPB88 = prescriptions per active beneficiary in 1988
- CPP88CP = cost per prescription - per-prescription charge
- CP = per-prescription charge
- PPB88CP = prescriptions per active beneficiary under copayment

The utilization figures for $3.00 were then used as the base for calculating further increases in the charge to $4.00. The figures for $4.00 were then used as the base for calculating the effect of an increase for $5.00.

A detailed listing of results is provided in Table 2A.1.

Table 2A.1: Simulated Utilization and Expenditure Effects of Per-Prescription Copayment for the Non-GAINS Elderly Population

Per Rx Copayment	Assumed Utilization Effect of Introduction of $2.50 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in OOB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000 000)
$2.50	10% reduction		25.8	10.0	37.8	89.7	51.9
	20% reduction		23.0	20.0	75.6	121.7	46.1
$3.00	10% reduction	-0.1	25.3	11.8	44.6	95.5	50.9
		-0.2	24.8	13.6	51.4	101.2	49.8
		-0.4	23.8	17.2	65.0	112.8	47.8
	20% reduction	-0.1	22.5	21.6	81.6	126.9	45.2
		-0.2	22.0	23.2	87.7	132.0	44.3
		-0.4	21.1	26.4	99.8	142.2	42.5
$4.00	10% reduction	-0.1	24.5	14.7	55.6	134.3	78.7
		-0.2	23.2	19.3	72.9	147.4	74.5
		-0.4	20.6	28.1	106.3	172.7	66.3
	20% reduction	-0.1	21.8	24.2	91.4	161.4	70.0
		-0.2	20.6	28.3	106.8	173.1	66.2
		-0.4	18.3	36.1	136.5	195.5	59.0
$5.00	10% reduction	-0.1	23.9	16.9	63.7	159.6	95.9
		-0.2	22.0	23.3	88.2	176.6	88.4
		-0.4	18.6	35.3	133.5	208.2	74.6
	20% reduction	-0.1	21.2	26.1	98.5	183.8	85.3
		-0.2	20.9	27.2	102.7	186.7	84.0
		-0.4	16.5	42.5	160.7	227.0	66.4

Appendix 3: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINS Elderly Population

See comments in Appendix 2 regarding data sources and calculation of non-GAINS elderly population.

Under this copayment scheme the beneficiary pays a specified percentage of the dispensing fee, and the maximum annual out-of-pocket expenditures by a beneficiary are capped. For the simulations we assumed a dispensing fee of $6.32, which is the current negotiated fee between the ODB program and the pharmacists. Under such a copayment scheme one would expect the dispensing fees to fall on average, as pharmacists compete in this dimension (at least in urban ares). We did not incorporate such decreases into the simulation; rather, we assumed a constant level for the dispensing fee (which has the effect of making it equivalent to a simulation of a fixed per-prescription charge equal to the specified percentage of $6.32).

The response of individuals with high levels of utilization who know at the beginning of the year that they are certain to reach the expenditure limit may differ form those individuals' whose utilization is low enough that their expenditures are likely to remain below the limit. Therefore, using data on the frequency distribution of beneficiaries by the number of prescriptions in 1988, for each charge/expenditure limit combination (e.g., 75% of dispensing fee/$100.00), we estimated the number of beneficiaries whose utilization was such that they would not reach the limit and the number who would reach the limit.

For beneficiaries whose utilization was such that they would not have reached the expenditure limit, the response was calculated using the same method as described in Appendix 2 for the per-prescription charge. One small difference occurs under the scheme in which beneficiaries pay 25% of the dispensing fee, or $1.60. Because this is less than the $2.50 initial copayment assumed in all other

calculations, the low and high responses to this level were assumed to be one-half those associated with a $2.50 copayment. Therefore, the introduction of a 25% coinsurance rate is assumed to result in either a 5% (low) or 10% (high) decrease in utilization.

For those beneficiaries whose utilization was high enough that they would have reached the limit, three different assumptions were made: (i) utilization would not change; (ii) utilization would decrease at one-half the rate of those below the limit; and (iii) utilization would decrease at the same rate as those below the cap. Again, specific calculations were performed in the same manner as described in Appendix 2, with the exception noted above.

Once the prescriptions per active beneficiary for each subgroup was obtained, the expenditure effects were calculated as follows:

(1) Decrease in total expenditures:

(i) above: $(B88 * CPP88 * PPB88) - \left[(A88 * CPP88 * PPB88CP) + (C88 * CPP88 * PPB88)\right]$

(ii) above: $(B88 * CPP88 * PPB88) - \left[(A88 * CPP88 * PPB88CP) + (C88 * CPP88 * PPB88CP2)\right]$

(iii) above: $(B88 * CPP88 * PPB88) - \left[(A88 * CPP88 * PPB88CP) + (C88 * CPP88 * PPB88CP)\right]$

(2) Decrease in ODB program expenditures:

(i) above: $(B88 * CPP88 * PPB88) - \left[(A88 * CPP88CP * PPB88CP) + ((C88 * CPP88 * PPB88) - (C88 * CAP))\right]$

(ii) above: (B88 * CPP88 * PPB88) - [(A88 * CPP88CP * PPB88CP) + ((C88 * CPP88 * PPB88CP2) - (C88 * CAP))]

(iii) above: (B88 * CPP88 * PPB88) - [(A88 * CPP88CP * PPB88CP) + ((C88 * CPP88 * PPB88CP) - (C88 * CAP))]

(2) Increase in consumer expenditures:

(i) above: (A88 * CP * PPB88CP) + (C88 * CAP)

(ii) above: same as (i) above

(iii) above: same as (ii) above

where:
- B88 = # of active non-GAINS elderly beneficiaries in 1988
- A88 = # of active non-GAINS elderly beneficiaries below expenditure cap in 1988
- C88 = # of active non-GAINS elderly beneficiaries above expenditure cap
- PPB88 = # of prescriptions per active beneficiary in 1988
- PPB88CP = # of prescriptions per active beneficiary in 1988 assuming full response
- PPB88CP2 = # of prescriptions per active beneficiary in 1988 assuming response rate one-half the full response
- CPP88 = cost per prescription in 1988
- CPP88CP = cost per prescription - copayment
- CP = copayment
- CAP = annual expenditure limit

A detailed listing of results is provided in Tables 3A.1 - 3A.2.

Table 3A.1: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINs Elderly Population

Condition 1 - Assume no utilization response for individuals whose utilization would put them above the annual expenditure limit

Copayment	Annual Expenditure Limit	Assumed Utilization Effect of Introduction of $1.60 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in OTB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000000)
25% of dispensing fee	$100	5% reduction		27.5	4.2	16.3	56.6	40.3
		15% reduction		24.9	13.2	50.1	87.1	37.0
	$200	5% reduction		27.3	4.9	18.0	55.9	37.9
		15% reduction		24.5	14.6	55.4	89.6	34.2
		Assumed Utilization Effect of Introduction of $2.50 Copayment						
50% of dispensing fee	$100	10% reduction	-0.1	26.4	8.0	30.2	99.8	69.6
			-0.2	26.0	9.4	35.2	103.8	68.7
			-0.4	25.1	12.5	46.9	113.3	66.4
		20% reduction	-0.1	24.7	13.9	52.8	118.0	65.3
			-0.2	24.3	15.3	57.8	122.1	64.3
			-0.4	23.5	18.1	67.9	130.2	62.4
	$200	10% reduction	-0.1	25.5	11.1	41.9	116.7	74.8
			-0.2	25.0	12.9	48.9	122.3	73.4
			-0.4	23.7	17.4	65.2	135.5	70.3
		20% reduction	-0.1	23.1	19.5	73.4	142.1	68.7
			-0.2	22.6	21.3	80.3	147.7	67.4
			-0.4	21.5	25.1	94.3	159.0	64.7

Table 3A.1: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINs Elderly Population. (cont'd)

Copayment	Annual Expenditure Limit	Assumed Utilization Effect of Introduction of $1.60 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in ODB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000000)
75% of dispensing fee	$100	10% reduction	-0.1	26.3	8.4	31.3	116.7	85.4
			-0.2	25.4	11.5	42.8	124.9	82.1
			-0.4	23.7	17.4	65.9	141.3	75.4
		20% reduction	-0.1	25.1	12.5	47.3	128.1	80.8
			-0.2	24.2	15.7	58.2	135.8	77.6
			-0.4	22.7	20.9	78.6	150.3	71.7
	$200	10% reduction	-0.1	25.8	10.1	38.5	157.5	118.9
			-0.2	24.7	13.9	52.7	167.5	114.8
			-0.4	22.6	21.3	81.0	187.6	106.7
		20% reduction	-0.1	24.3	15.3	58.2	171.4	113.3
			-0.2	23.3	18.8	71.5	180.9	109.4
			-0.4	21.4	25.4	96.7	198.8	102.1

Table 3A.2: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the NON-gains Elderly Population

Condition 2 - Assume response by individuals whose utilization would put them above the cap is equal to 1/2 the response of individuals below the cap

Copayment	Annual Expenditure Limit	Assumed Utilization Effect of Introduction of $1.60 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in OOB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000000)
25% of dispensing fee	$100	2.5% reduction		27.4	4.5	17.4	57.7	40.3
		7.5% reduction		24.6	14.3	53.4	90.5	37.0
	$200	2.5% reduction		27.3	4.9	18.2	56.1	37.9
		7.5% reduction		24.4	15.0	56.0	90.3	34.2
50% of dispensing fee	$100	Assumed Utilization Effect of Introduction of $2.50 Copayment: 5% reduction	-0.05	25.8	10.1	38.8	108.4	69.6
			-0.10	25.3	11.8	45.3	113.9	68.7
			-0.20	24.1	16.0	60.3	126.7	66.4
		10% reduction	-0.05	23.5	18.1	68.1	133.4	65.3
			-0.10	23.0	19.9	75.1	139.4	64.3
			-0.20	22.0	23.3	88.0	150.4	62.4
	$200	5% reduction	-0.05	25.3	11.8	44.7	119.4	74.8
			-0.10	24.7	13.9	52.1	125.5	73.4
			-0.20	23.4	18.5	69.5	139.8	70.3
		10% reduction	-0.05	22.7	20.9	78.2	147.0	68.7
			-0.10	22.2	22.6	85.8	153.2	67.4
			-0.20	21.1	26.5	100.7	165.4	64.7

Table 3A.2: Simulated Utilization and Expenditure Effects of Co-payment with Annual Expenditure Cap for the Non-GAINs Elderly Population (cont'd)

Copayment	Annual Expenditure Limit	Assumed Utilization Effect of Introduction of $1.60 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in ODB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000000)
75% of dispensing fee	$100	5% reduction	-0.05	25.0	12.9	48.3	133.7	85.4
			-0.10	23.5	18.1	67.9	150.0	82.1
			-0.20	20.9	27.2	102.5	177.9	75.4
		10% reduction	-0.05	23.1	19.5	73.7	154.5	80.8
			-0.10	21.8	24.0	91.4	169.0	77.6
			-0.20	19.3	32.8	124.0	195.7	71.7
	$200	5% reduction	-0.05	24.8	13.6	51.8	170.7	118.9
			-0.10	23.2	19.2	72.3	187.2	114.8
			-0.20	20.4	28.9	109.6	216.3	106.7
		10% reduction	-0.05	22.7	20.9	78.9	192.1	113.3
			-0.10	21.3	25.8	97.6	206.9	109.4
			-0.20	18.7	34.8	132.3	234.4	102.1

Table 3A.3: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINs Elderly Population

Condition 5 - Assume Identical Response by All Individuals

Copayment	Annual Expenditure Limit	Assumed Utilization Effect of Introduction of $1.60 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in OOB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000 000)
25% of dispensing fee	$100	5% reduction		27.3	5.0	18.4	58.8	40.3
		15% reduction		24.4	15.0	56.6	93.7	37.0
	$200	5% reduction		27.3	5.0	18.4	56.3	37.9
		15% reduction		24.4	15.0	56.6	90.9	34.2
		Assumed Utilization Effect of Introduction of $2.50 Co-payment						
50% of dispensing fee	$100	10% reduction	-0.1	25.1	12.5	47.4	117.0	69.6
			-0.2	24.5	14.6	55.3	124.0	68.7
			-0.4	23.1	19.5	73.8	140.2	66.4
		20% reduction	-0.1	22.4	22.0	83.0	148.3	65.3
			-0.2	21.8	24.0	90.9	155.2	64.3
			-0.4	20.6	28.2	106.7	169.1	62.4
	$200	10% reduction	-0.1	25.1	12.5	47.4	122.2	74.8
			-0.2	24.5	14.6	55.3	128.7	73.4
			-0.4	23.1	19.5	73.8	144.0	70.3
		20% reduction	-0.1	22.4	22.0	83.0	151.7	68.7
			-0.2	21.8	24.0	90.9	158.3	67.4
			-0.4	20.6	28.2	106.7	171.4	64.7

Table 3A.3: Simulated Utilization and Expenditure Effects of Copayment with Annual Expenditure Cap for the Non-GAINs Elderly Population (cont'd)

Copayment	Annual Expenditure Limit	Assumed Utilization Effect of Introduction of $1.60 Copayment	Price Elasticities Assumed for Increases in Copayment above $2.50	# Rx/ Active Beneficiary	% Reduction in Utilization	Decrease in Total Expenditures ($ 000 000)	Decrease in OOB Expenditures ($ 000 000)	Increase in Consumer Expenditures ($ 000 000)
75% of dispensing fee	$100	10% reduction	-0.1	23.8	17.1	64.5	149.9	85.4
			-0.2	22.0	23.3	88.2	170.3	82.1
			-0.4	18.4	35.9	135.7	211.1	75.4
		20% reduction	-0.1	21.3	25.8	97.5	178.2	80.8
			-0.2	19.6	31.7	119.9	197.5	77.6
			-0.4	16.4	42.9	162.0	233.7	71.7
	$200	10% reduction	-0.1	23.8	17.1	64.5	183.5	118.9
			-0.2	22.0	23.3	88.2	203.1	114.8
			-0.4	18.4	35.9	135.7	242.3	106.7
		20% reduction	-0.1	21.3	25.8	97.5	210.7	113.3
			-0.2	19.6	31.7	119.9	229.2	109.4
			-0.4	16.4	42.9	162.0	264.1	102.1

DRUG INFORMATION SOURCES

FOR THE PUBLIC

Prepared by

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and

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March 1990

INTRODUCTION

The purpose of this report is to review the printed and electronic sources of drug information available to the public. In recent years there has been increasing recognition of the rights of citizens to access health information. The Evans Report, **Toward a Shared Direction for Health in Ontario** (1987) identified informed choice for health care consumers as one of the key principles that will guide the future direction of health policy in the province.

Consumer health information, according to the library and information science literature, includes information related to personal health care, the health care system, self-help groups, disease prevention, health promotion, health policy and environmental issues (Marshall, Sewards and Dilworth, 1989). In spite of limited resources, librarians in public libraries and health facility libraries have made various attempts to establish consumer health information services in the last decade. A myriad of health information is also provided through the school system, voluntary organizations, community referral services, government agencies, professional groups and public health promotion campaigns.

There is presently no central coordinating body for the provision of consumer health information in Ontario, although a proposal for a provincial consumer health information centre is currently being developed by the Consumers' Association of Canada (CAC, Ontario) Health Committee. In a needs assessment conducted as part of the CAC, Ontario proposal, the problem of consumer health information was identified as one of accessibility rather than availability (Marshall, 1990).

DRUG INFORMATION NEEDS

Queries about drugs represent a major component of consumer health information requests. In a recent survey of consumer health information requests made of public librarians in Ontario, 42% of the queries related to specific disease or medical treatment information and most of the librarians reported that the number of such requests was increasing (Marshall, Sewards and Dilworth, 1989). Another indicator of the demand for drug information is that the second most commonly held reference book in Ontario public libraries found in the survey (after **Gray's Anatomy**) was the **Compendium of Pharmaceuticals and Specialties (CPS)**. Other reference books on drugs that were reported in the public library collections included: **Joe Graedon's People's Pharmacy**; **Handbook of Non-Prescription Drugs**; the journal **FDA Consumer**; and the **Ontario Drug Benefit Formulary**.

The public libraries represent only one available source of consumer health information. In fact, according to the CAC needs assessment cited earlier, most consumers obtain their health information from (in order of frequency): health care providers; media such as popular magazines, newspapers, television programs; relatives and friends; health care organizations; public libraries and the local

bookstore. The existence of a specialized index devoted to articles in magazines, **Consumer Health and Nutrition Index** (Oryx Press), indicates that the amount of popular magazine literature on health is quite substantial.

AVAILABILITY SURVEY OF POPULAR HEALTH BOOKS

The major focus of this report is on health **books** available to the public. A list of publicly-accessible computer databases is also included, although most of these sources are aimed at health professionals. Several bookstores in the Toronto area were initially surveyed by the investigators to get a general idea of the proportion of health books available and, within the respective health sections in the bookstores, the proportion of books available on drugs.

All of the bookstores surveyed (Coles, University of Toronto Bookstore, and the Pearson Airport Terminal 1 Bookstore) had a section of health books containing 50 or more titles. The topics ranged from very specific disease related books to books on diet, stress and fitness. The latter topics were by far the most popular. Some bibliographies of general consumer health materials are included in the appendix of this report as an indication of the materials that are available.

Although many of the books contained some drug information, each bookstore health section included two or three exclusively on drugs. The most frequently encountered titles were: **The Pill Book** by Silverman and Simon and **Understanding Canadian Prescription Drugs** by Smith. While the selection of drug books in the bookstore milieu was very limited, a much wider selection was found in Toronto libraries.

It is interesting to note that a number of the books that were originally developed for health professionals (e.g., CPS) are now being used by the public as well (at least in libraries). The rise in health care consumerism appears to be breaking down the traditional barrier between professional and lay forms of information. The books found in the survey are listed below. A code indicating the location or source follows each listing.

REFERENCES:

Marshall JG. Consumer health information needs assessment. Unpublished survey for CAC (Ontario), February 1990.

Marshall, JG, Sewards, C, Dilworth EL. Health information services in Ontario public libraries. Final report to the Ontario Ministry of Culture and Communications, August 1989.

Towards a shared direction for health in Ontario: Report of the Ontario Health Review Panel. Toronto: Ministry of Health, 1987. Chair: John Evans.

DRUG BOOKS

LOCATION AND SOURCE CODES:

SM = SCIENCE AND MEDICINE LIBRARY, UNIVERSITY OF TORONTO

TPL = TORONTO PUBLIC LIBRARY

BIP* = BOOKS IN PRINT 1989-90.

CIP* = CANADIAN BOOKS IN PRINT 1989-90.

***Books listed in the publications Books in Print (U.S.) and Canadian Books in Print are available from the publishers.**

AARP PHARMACY SERVICE PRESCRIPTION DRUG HANDBOOK.
Washington, DC.: American Association of Retired Persons; Glenview, Ill: Scott, Foresman and Co., Lifelong Learning Division, 1988.
(TPL)

AHFS DRUG INFORMATION.
Gerald K. McEvoy, editor. American Society of Hospital Pharmacists, 1989.
(SM)

ADVERSE EFFECTS: WOMEN AND THE PHARMACEUTICAL INDUSTRY.
Kathleen McDonnell, editor. Toronto: The Women's Press, 1986. $12.95.
(CIP)

ADVICE FOR THE PATIENT, Vol.II.
The United States Pharmacopoeial, Inc. Harrisonburg: George Banta Co., 1989. $37.00 (US) - includes 1 year of updates.
(SM)

* part of a three volume series published by USP:
Volume I - Drug Information for the Health Care Professional
Volume II - Advice for the Patient
Volume III - Approved Drug Products and Legal Requirements

* Physicians, pharmacists, nurses, or other health professionals are given permission in the introduction to reproduce a limited number of pages for patients or clients.

CANADIAN CHEMICAL, PHARMACEUTICAL AND PRODUCT DIRECTORY.
Lloyd, 1983. $25.00.
(CIP)

CANADIAN ENCYCLOPEDIA OF DRUG THERAPY.
Pointe-Claire, Quebec: STA Communications Inc., 1981.
(SM)

* presents relevant prescribing information for those drugs most often prescribed by the family physician, general practitioner or specialist.

* a general index provides access to drugs through both brand and generic names.

* includes a listing of addresses and phone numbers for all Canadian manufacturers.

CANADIAN SELF-MEDICATION: A REFERENCE FOR THE HEALTH PROFESSIONS.
Carmen M.E. Krogh, editor. Ottawa: Canadian Pharmaceutical Association, c1984.
(TPL)

CHEMICALLY DEPENDENT WOMAN: Rx:RECOGNITION, REFERRAL, REHABILITATION.
Toronto: Addiction Research Foundation, 1980. $5.50.
(CIP)

COMPENDIUM DES PRODUITS PHARMACEUTIQUES ET SPECIALITES.
23ieme ed., Patricia Carruthers-Czyzewski, editor. Toronto: Association Pharmaceutique Canadienne, 1988. $79.00.
(TPL)

COMPENDIUM OF PHARMACEUTICALS AND SPECIALTIES.
23rd ed. Carmen M.E. Krogh, editor-in-chief. Ottawa: Canadian Pharmaceutical Association, 1988. $71.00
(TPL)

COMPLETE PARENTS' GUIDE TO TELEPHONE MEDICINE: WHEN TO CALL, WHAT TO ASK, HOW TO HELP.
By Jeffrey L. Brown. Putnam Publishing Group, rev.ed. 1988. $9.95 (US)
(BIP)

CONSUMER GUIDE PRESCRIPTION DRUGS.
Nicola Giacona and Consumer Guide Editors, editors. 1985. $6.95 (US).
(BIP)

DIRECTORY OF ALCOHOL AND DRUG TREATMENT RESOURCES IN ONTARIO.
By Donna Heughan. Toronto: Addiction Research Foundation, 1988. $25.00.
(CIP)

DRUGS AND DRUG ABUSE: A REFERENCE TEXT.
By Michael Jacobs. Toronto: Addiction Research Foundation, 1987. $29.50
(CIP)

DRUG FACTS AND COMPARISONS.
By Erwin K. Kastrup and Bernie Olan. Philadelphia: Lippincott, 1989. $69.50 (US)
(BIP)

DRUG INFORMATION REFERENCE.
2nd ed. Anne M. Leathem and Radojka Z. Harris, editors. Vancouver: B.C. Drug and Poison Information Centre, 1987. $49.00 ($39.00 students)
(CIP)

DRUG INFORMATION: A GUIDE TO CURRENT RESOURCES.
By Bonnie Snow. Chicago: Medical Library Association, Inc., 1989.
(SM)

* designed to be used as a self-study text for continuing information or as a course text in more formal instruction programs.

* offers an excellent introduction to relevant printed resources, including: background data on pharmaceutical terminology, legal and regulatory issues, and common problems in drug information provision.

* Bibliography includes: lists of official compendia, resources for identification of foreign (non US), domestic, investigational, and newly marketed drug products. Also includes reference sources for pharmacology and therapeutic questions, drug interactions, adverse effects, toxicology etc.

DRUG INFORMATION FOR THE CONSUMER: 1990 EDITION.
United States Pharmacopoeial Convention, Inc. Staff, 1989. $25.00 (US).
(BIP)

DRUG INTERACTIONS HANDBOOK.
Englewood Cliffs, NJ: Prentice Hall, 1984. $19.95 (US).
(BIP)

ESSENTIAL GUIDE TO GENERIC DRUGS.
1st ed. By Laurence M. Lieberman. New York: Harper and Row, c1986.
(TPL)

ESSENTIAL GUIDE TO PRESCRIPTION DRUGS.
By James W. Long. New York: Harper and Row, 1988. $27.50 (US).
(BIP)

ENCYCLOPEDIA OF DRUG ABUSE.
By Robert O'Brien and Sidney Cohen. New York: Facts on File, c1984.
(TPL)

EXTRA PHARMACOPOEIA.
28th ed. James E.F. Reynolds, editor. London, England: The Pharmaceutical Press, 1982.
(TPL)

FAMILY PHYSICIAN'S COMPENDIUM OF DRUG THERAPY.
New York: McGraw-Hill, 1988. $29.95.
(TPL)

FOOD-MEDICATION INTERACTIONS.
4th ed. By Dorothy E. Powers and Ann O. Moore. Temple, Ariz: F-MI Publishing, 1983.
(TPL)

HANDBOOK FOR PRESCRIBING MEDICATION DURING PREGNANCY.
2nd ed. By Richard L. Berkowitz, et al. Little, 1986. $6.50 (US)
(BIP)

HANDBOOK OF CLINICAL DRUG DATA.
6th ed. James E. Knoben and Philip O. Anderson, editors. Hamilton, Ill: Drug Intelligence Publications Inc., c1988.
(SM)

HANDBOOK OF NON-PRESCRIPTION DRUGS.
8th ed. Edward G. Feldman, editor. Washington, D.C.: American Pharmaceutical Association, 1986. $70.00 (US).
(BIP)

HEALTH PROTECTION AND DRUG LAWS.
Ottawa: Health and Welfare Canada, 1988. $3.75.

HOW TO SAVE DOLLARS WITH GENERIC DRUGS: A CONSUMER'S GUIDE TO HIGH-QUALITY, LOW-PRICED MEDICINES.
1st Quill ed. By Max A. Ferm and Betty Ferm. New York: Quill, c1985.
(TPL)

IPA DRUG TRADE NAME CROSS REFERENCE LIST.
8th update. Dwight R. Tousignaut, editor. American Society of Hospital Pharmacists, 1986.
(BIP)

ILLICIT DRUGS IN CANADA.
By Judith C. Blackwell and Patricia G. Erickson. Nelson, 1988. $27.95.
(CIP)

MPD85: MOST PRESCRIBED DRUGS 1985.
By Ronald J. Tallarida. Philadelphia: W.B. Saunders, 1985. $22.95 (US)
(TPL)

MEDICAL LETTER HANDBOOK OF ADVERSE DRUG INTERACTIONS.
By Martin A. Rizack. New Rochelle, NY: The Medical Letter, Inc., c1987.
(SM)

MERCK INDEX: AN ENCYCLOPEDIA OF CHEMICALS, DRUGS AND BIOLOGICALS.
Martha Windholz, editor. Rathway, N.J.: Merck, 1983.
(TPL)

MEYLER'S SIDE EFFECTS OF DRUGS: AN ENCYCLOPEDIA OF ADVERSE REACTIONS AND INTERACTIONS.
11th ed. M.N.G. Dukes, editor. New York: Elsevier, 1988.
(SM)

NEW CARDIOVASCULAR DRUGS.
Alexander Sciabine, editor. Raven, 1985. $62.50 (US)
(BIP)

NON-PRESCRIPTION DRUGS.
By Debra A. Lumpe. Stoddart, 1989. $6.95.
(CIP)

NURSING'89 DRUG HANDBOOK.
Springhouse, Pennsylvania: Springhouse Corporation, 1988. $21.95.

OVER THE COUNTER DRUGS: HARMLESS OR HAZARDOUS?
By Paul R. Sanberg and Richard M.T. Krema. New York: Chelsea House Publishers, 1986.
(TPL)

OVER THE COUNTER PILLS THAT DON'T WORK.
1st Pantheon ed. By Joel Karfman et al. New York: Pantheon Books, c1983.
(TPL)

PHARMACISTS PRESCRIPTION: YOUR COMPLETE GUIDE TO OVER THE COUNTER REMEDIES.
By James F. Grogan. Rawson Assocs., 1987. $19.95 (US)
(BIP)

PHARMACOLOGICAL AND CHEMICAL SYNONYMS: A COLLECTION OF NAMES OF DRUGS, PESTICIDES AND OTHER COMPOUNDS DRAWN FROM THE MEDICAL LITERATURE OF THE WORLD.
8th ed. E.E.J. Marler. Oxford: Elsevier, 1985.
(TPL)

PHYSICIAN'S DRUG HANDBOOK 1989.
Springhouse Publishing, 1989. $24.95 (US).
(BIP)

PILL BOOK.
3rd rev ed. By Harold M. Silverman and Gilbert I. Simon. Toronto: Bantam Books, 1986. $6.95.
(TPL, SM)

* the purpose of this book is to provide educational information to the public concerning the majority of the various types of prescription drugs which are presently utilized by physicians.

* includes photographs of brand name drugs.

PILL BOOK FOR SENIOR CITIZENS.
By Harold M. Silverman. Toronto: Bantam Books, 1986. $4.95.
(TPL, SM)

* emphasis is on drugs prescribed to the senior population.

REAL PUSHERS: A CRITICAL ANALYSIS OF THE CANADIAN DRUG INDUSTRY.
By Joel Lexchin. New Star, 1984. $8.95.
(CIP)

RIGHT DOSE: HOW TO TAKE VITAMINS AND MINERALS SAFELY.
By Patricia Hausman. Emmaus, Pa: Rodale Press, c1987.
(TPL)

UNDERSTANDING CANADIAN PRESCRIPTION DRUGS: A CONSUMER'S GUIDE TO CORRECT USE.
By Dorothy L. Smith. Toronto: Key Porter, 1989.

* A tool for consumers with questions about drugs being prescribed by their doctors.

* Prepared in cooperation with the Canadian Pharmaceutical Association.

UNLISTED DRUGS: PHARM-AID/89.
Chatham, NJ: Pharmaco-Medical Documentation Inc., 1989.
(SM)

WHAT YOUR DOCTOR DIDN'T LEARN IN MEDICAL SCHOOL...& WHAT YOU CAN DO ABOUT IT.
By Stuart M. Berger. Morrow, 1988. **(BIP)**

WOMEN'S PHARMACY.
By Michele Paul. Windsor, NY: (date not set).$3.50 (US).
(BIP)

DRUG DATABASES

CHEMICAL REGULATIONS AND GUIDELINES SYSTEM (CRGS)

An index to U.S. federal regulatory material relating to the control of chemical substances.

CONSUMER DRUG INFORMATION FULL TEXT

The complete text of **Consumer Drug Digest** published by the American Society of Hospital Pharmacists.

CONSUMER REPORTS

The full text of the **Consumer Reports** magazine which contains articles on a variety of consumer issues, including health.

DEHAEN DRUG DATA

Information from over 1200 biomedical periodicals on topics such as adverse reactions, clinical studies, drug efficacy, drug interactions, drug toxicity, and marketed drugs.

DIOGENES

Contains U.S. FDA regulatory information including news stories and unpublished documents relating to regulation of pharmaceuticals and medical devices.

DRUG INFORMATION FULL TEXT

Corresponds to two publications: **American Hospital Formulary Service** and **Handbook of Injectable Drugs.**

INTERNATIONAL PHARMACEUTICAL ABSTRACTS

Information on all phases of the development and use of drugs and on professional pharmaceutical practice. Indexes and abstracts over 650 pharmaceutical and related journals.

MARTINDALE ONLINE

Full text version of the book **Martindale: The Extra Pharmacopoeia**.

MEDLINE

Comprehensive database containing over 6.2 million citations to the biomedical literature.

MERCK INDEX ONLINE

An electronic version of a well-known, one-volume encyclopedia or chemicals, drugs and biologicals.

PHARMACEUTICAL NEWS INDEX

Current news about pharmaceuticals, cosmetics and related fields. Aimed primarily at the drug industry.

SEDBASE

Full text information about the side effects of drugs.

The above databases are available through the DIALOG online search service.

APPENDICES

Lists of consumer health books

CAC Proposal Information Sheet

CHI List of Books

Compiled by Karen Hackleman
GGEAR Program
University of Maryland at Baltimore

Introduction

This list of consumer health titles contains recommendations by librarians attending MLA 637 (Consumer Health Information Services for the Lay Person) taught by the compiler during 1988.

Aronson, Miriam K. (editor)
- **Understanding Alzheimer's Disease: What It Is, How To Treat It, How To Cope With It.** ADRA Scribner, 1988.

Blum, Richard H. and Heinrichs, W. LeRoy
- **Helping Women Keep Well: A Guide To Health Promotion and Disease Prevention For the Women's Health Professional.** New York: Irvington Publishers, 1988.

Brazelton, T. B.
- **Doctor & Child.** Dell, 1986.
- **Infants & Mothers: Differences In Development.** Dell, 1988.

Clark, D.
- **Loving Someone Gay.** NAL, 1978.

Clayman, C. B.
- **The American Medical Association Guide To Prescription and Over-The-Counter Drugs.** Random House, 1988.

Consumer Health and Nutrition Index. - Vol. 1, No. 1 (July 1985). Phoenix: Oryx Press, 1985.

Decker, John L. (Series)
- **The Reliable Health Care Companion Series.** Avon.
  - **Understanding & Managing Arthritis.** 1987.
  - **Understanding & Managing Asthma.** (Michael Kaliver, ed.), 1988.
  - **Understanding & Managing Hypertension.** 1987.
  - **Understanding & Managing Osteoporosis.** 1988.
  - **Understanding & Managing Diabetes.** 1987.

Doress, P. B. and Siegel, D. L.
- **Ourselves Growing Older.** Simon & Schuster, 1987.

Ferguson, L. Kraeer and Kerr, John H.
- **Explain It To Me, Doctor.** Lippincott, 1970.

Ferguson, T.
- **Smoker's Book Of Health: How To Keep Yourself Healthy and Reduce Your Smoking Risks.** Putman Publishing Group, 1987.

Fries, J. F.
- **Arthritis: A Comprehensive Guide.** Addison-Wesley, 1979.
- **Arthritis Help Book.** -???

Griffith, H. Winter
- **Complete Guide To Symptoms, Illnesses and Surgery.** Price Stern, 1985.

Hamilton, Helen and McVan, Barbara
- **Professional Guide To Diseases.** 2nd Ed., Springhouse, 1987.

Holleb, A. I., Subak-Sharpe, Genell and White, W.
- **The American Cancer Society's Cancer Book: Prevention, Detection, Diagnosis, Treatment, Rehabilitation and Cure.** Doubleday, 1986.

Krause, Marie V. and Mahan, L. Kathleen
- **Food, Nutrition and Diet Therapy: A Textbook Of Nutritional Care.** 7th Ed., Saunders, 1984.

Kubler-Ross, E. and Warshaw, M.
- **Aids: The Ultimate Challenge.** Macmillan, 1987.

Kubler-Ross, E.
- **The Final Stage Of Growth.** Simon & Schuster, 1986.

Kunz, Jeffrey R. M. and Finkel, Asher J.
- **The American Medical Association Family Medical Guide, Revised Edition.** Random House, 1987.

Kushner, H. S.*
- **When Bad Things Happen To Good People.** Schocken, 1987.

Nilsson, L., Lindberg, J., Lindquist, K. and Norfeldt, S.
- **The Body Victorious: The Illustrated Story Of Our Immune System and Other Defenses Of The Human Body.** London; Boston: Faber & Faber, 1987.

Patient Teaching. Nurse's Reference Library. Springhouse, PA: Springhouse Corporation, 1987.

Pelletier, Kenneth R.
- **Mind As Healer, Mind As Slayer: A Holistic Approach To Preventing Stress Disorders.** New York: Delacorte Press, S. Lawrence, 1977.

Professional Guide To Diseases: An Up-To-Date Encyclopedia Of Illnesses, Disorders, Injuries and Their Treatment. • 2nd Ed., Springhouse, PA: Springhouse Corporation, 1987.

Schmitt, B. D.
- **Your Child's Health: A Pediatric Guide For Parents.** Bantam, 1987.

Siegel, Bernie S.
- **Love, Medicine & Miracles: Lessons Learned About Self-Healing From A Surgeon's Experience With Exceptional Patients.** 1st Ed., Harper & Row, 1986.

Simpson, Michael A.
- **Dying, Death and Grief: A Critical Bibliography.** Pittsburgh: University of Pittsburgh Press, 1987.

Smith, D. W.
- **Recognizable Patterns Of Human Malformation: Genetic, Embrologic & Clinical Aspects.** 3rd Ed., Saunders, 1982.

Treatments. • Nurse's Reference Library. Springhouse, PA: Springhouse Corporation, 1988.

United States Pharmacopeial Convention
United States Pharmacopeia Dispensing Information; USPDI. Drug Information For The Health Care Provider; **USPDI. Advice For The Patient.** Vol. 2, Rockville, MD: The Convention; Easton, PA: Mack Publishing Company, 1980.

Vickery, Donald M. and Fries, James F.
- **Take Care Of Yourself: The Consumer's Guide To Medical Care.** 3rd Ed., Reading, Mass.: Addison-Wesley, 1986.

Why Me Series • (Personal Accounts Of Experiences With Breast Cancer, Etc.)

*Harold S. Kushner has written a number of ethically-oriented books for the public.

More than the "flashy, trashy pop-medicine books" that patrons have heard about on television

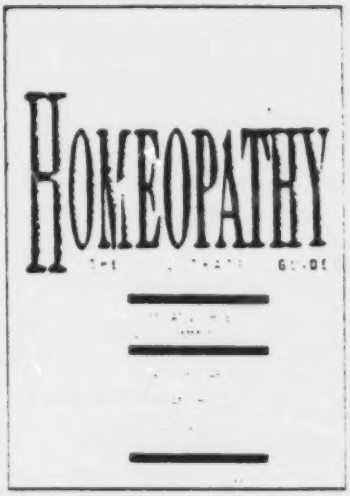
Best Lay Medical Books for Public Libraries 1988–89

By Susan B. Hagloch

THE SELECTION of medical books for a public library can be tricky. It is not enough for a book to be thorough and accurate. Lay readers need their medical information to be accessible, first and foremost. Too much medical terminology, too many details, even a boring title or cover art can deter a lay reader.

Also, public library patrons want the flashy, trashy pop-medicine books that they have heard about on television or seen mentioned in the popular press. They want the diet book that promises the pounds will melt off while they sit on the couch and eat popcorn. They want the book that promises they can live vigorous lives into their 90s and beyond if they completely revamp their eating habits, drink 14 glasses of purified water daily, and hang upside down. They want the book that tells them all about the latest fashionable disease that no one ever heard of until last Tuesday.

Susan B. Hagloch is Director, Tuscarawas County Public Library, New Philadelphia, Ohio



What's a public librarian to do? As with so many other things, we compromise. We buy the best-selling junk to keep the faddists happy. We try to find books that explore the popular new theories in a responsible way, without either promising unrealistic results or promoting dangerous regimens. And we try to slip in some solid, factual medical information, in an attractive package. We wade through reviews trying to find titles that will be popular, but that are also good.

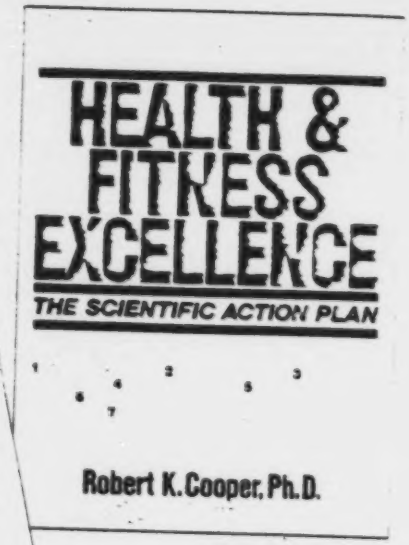
The past year has brought forth the usual profusion of medically oriented titles aimed at a lay audience. The following 30 titles were selected as being the best of the current crop. Each one was chosen because it covers a subject of potential interest to public library patrons in a responsible, easily understood way. Any or all of them would be a worthwhile addition to a public library collection.

BEARD, Mary & Lindsay Curtis. **Menopause and the Years Ahead.** Fisher Bks. 3499 Campbell Ave., Tucson, AZ 85719. ISBN 1-55561-009-9. $9.95.
Up-to-the-minute information on what to expect and how to cope. Includes the latest on estrogen replacement therapy.

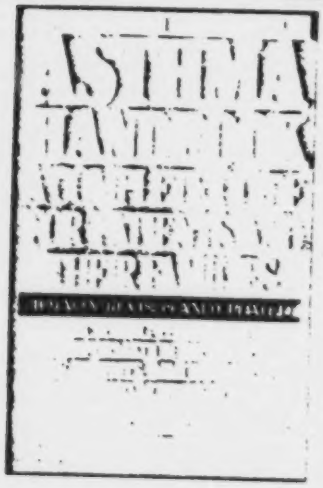
BENZAIA, Diana. **Protect Yourself from Lyme Disease: The New York Medical College Guide to Prevention, Detection, and Treatment.** Dell, Jul. 1989. 118p. ISBN 0-440-20437-2. pap. $4.50.
This year's "in" disease, most libraries have gotten questions on it. This nicely priced guide will answer them all.

BOSCO, Dominick. **The People's Guide to Vitamins and Minerals from A to Zinc.** rev. ed. Contemporary Bks, 1989. 368p. index. ISBN 0-8092-4582-5. $11.95.
What each vitamin (and mineral) does, what

Explains both normal and abnormal function of the male organs



Detailed information on the causes of asthma, particularly in children



Assesses the reader's risk, and provides guidelines for diet and exercise

Up-to-the-minute info on what to expect, how to cope

foods it's found in; what damage an overdose may cause. Complete and easy to understand.

CARROLL, David L. **When Your Loved One Has Alzheimer's Disease: A Caregiver's Guide Based on Methods Developed by the Brookdale Center on Aging.** Harper. Apr. 1989. 256p. LC 88-45569. ISBN 0-06-015887-5. $17.95.
Comprehensive resource for caregivers, explaining what to expect and how to handle it. Includes daily concerns and sources of assistance.

CONFRONTING **Mitral Valve Prolapse: Mysterious Heart Conditions of the Young and Healthy.** Slawson Communications. Dec. 1988. 183p. illus. ISBN 0-932238-45-9. $12.95.
This common condition is being more frequently diagnosed these days. This common sense guide explains what it is, and how its symptoms may be alleviated.

COOPER, Kenneth H. **Preventing Osteoporosis.** Bantam. 1989. 272p. index. ISBN 0-553-05335-3. $18.95.
Assesses the reader's risk, and provides guidelines for diet and exercise habits to slow bone loss.

COOPER, Robert K. **Health and Fitness Excellence: The Scientific Action Plan.** Houghton. 1989. 332p. illus. index. LC 88-27581. ISBN 0-395-47580-0. $19.95.
Responds to the current interest in holistic health. Integrates good nutrition, exercise, and stress-control with less familiar mental and spiritual techniques.

DE LYSER, Femmy. **Jane Fonda's New Pregnancy Workout and Total Birth Program.** S. & S. Nov. 1989. 250p. illus. ISBN 0-671-66763-7. $24.95.
Updates an earlier edition. Good exercises; good preparation for birth; lots more.

DONAHUE, Peggy Jo & *Prevention* Magazine Eds. **How To Prevent a Stroke: A Complete Risk-Reduction Program.** Rodale. 1989. index. ISBN 0-87857-781-5. $19.95; **pap.** ISBN 0-87857-785-8. $14.95.
How to determine your risk and reduce it. Also includes some information on treatment and rehabilitation after a stroke.

DREHER, Henry. **Your Defense Against Cancer: The Complete Guide to Cancer Prevention.** Harper. Jan. 1989. 400p. illus. index. ISBN 0-06-015740-2. $18.95.
How to avoid or minimize contact with common carcinogens. Good sense, not sensationalism.

FERGUSON, James M. **Habits Not Diets: The Secret to Lifetime Weight Control.** rev. ed. Bull Pub., dist. by Publishers Group West. Nov. 1988. ISBN 0-915950-85-5. $12.95.
Revised and expanded from the original best seller. Outlines a program of behavior modification instead of a quick-fix fad plan. Sensible and healthy.

GERSHWIN, M. Eric & Edwin L. Klingelhofer. **Conquering Your Child's Allergies.** Addison-Wesley. Jun. 1989. index. ISBN 0-201-12967-1. $18.95.
Comprehensive guide to allergic symptoms and common "triggers." Includes ways of helping children manage.

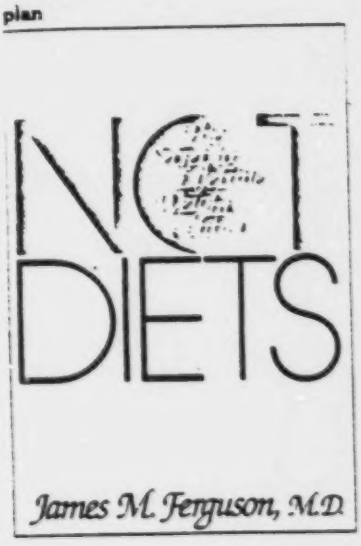
GILBAUGH, James. **A Doctor's Guide to Men's Private Parts.** Crown. May 1989. 128p. illus. ISBN 0-517-57138-2. **pap.** $9.95.
Explains both normal and abnormal function of the male organs, including the effects of various diseases and medications.

HENSEL, Bruce. **Smart Medicine: How To Get the Most Out of Your Medical Checkup and Stay Healthy.** Putnam. Apr. 1989. 256p. index. LC 88-32286. ISBN 0-399-13446-8. $18.95.
Sound advice on choosing a doctor, and becoming an active participant in your own medical care. Includes a comprehensive list of medical tests.

JASON, Janine & Antonia Van der Meer. **Parenting Your Premature Baby.** Holt. May 1989. 268p. index. LC 88-8367. ISBN 0-8050-0880-2. $18.95.
Covers not only the special physical care required by preemies, but also the emotional needs of the parents.

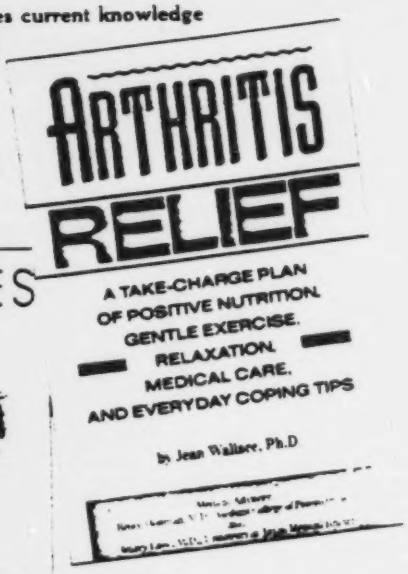
KOWALSKI, Robert E. **The Eight-Week Cholesterol Cure.** rev. ed. Harper. 1989. index, bibliog. LC 89-45254. ISBN 0-06-016183-3. $19.95.

Outlines a program of behavior modification instead of a quick-fix fad plan



Explains how hormones govern most body and mind functions

Summarizes current knowledge of arthritis



The new edition of this now-classic guide expands on the original with extra information, more recipes, and documentation of results.

LATELLA, F. Skip & others. **Get in Shape, Stay in Shape.** Consumer's Union. Apr. 1989. ISBN 0-89043-243-0. $15.
No gimmicks, no frills, just straightforward information, instructions for a variety of types of exercise, and a buying guide for equipment.

MILUNSKY, Aubrey, M.D. **Choices Not Chances: An Essential Guide to Your Heredity and Health.** Little. Feb. 1989. 512p. illus. index. ISBN 0-316-57423-6. $22.50.
How to determine your risk for passing along a hereditary disease to your children, and the medical, legal, and ethical implications.

MORGAN, Brian & Roberta Morgan. **Hormones: A Complete Guide to Understanding How Hormones Affect Every Aspect of Your Life.** Price/Stern/Sloan. May 1989. 224p. index. biblio. ISBN 0-89586-662-5. $18.95.
Explains how hormones govern most body and mind functions. Clear and understandable descriptions of disorders and their treatment.

MURCIA, Andy & Bob Stewart. **Man to Man: When the Woman You Love Has Breast Cancer.** St. Martin's. 1989. 256p. illus. index. ISBN 0-312-02605-6. $16.95.
Excellent resource for men, addressing their fears and responsibilities in a straightforward way. Would be helpful for other family members, too.

RICHARDSON, Sarah. **Homeopathy: Stimulating the Body's Natural Immune System.** Harmony: Crown. 1988. 160p. illus. index. ISBN 0-517-57148-X. $11.95.
Homeopathic medicine is another current interest in many areas. This is an excellent source of basic information.

ROSENFELD, Isadore. **Symptoms.** S. & S. Apr. 1989. ISBN 0-671-66140-X. $19.95.
Describes various common symptoms, tells what may cause them and what to do about it. A hypochondriac's dream.

RUGGIERO, Roberta. **The Do's and Don'ts of Low Blood Sugar: An Everyday Guide to Hypoglycemia.** Fell. 1989. 104p. bibliog. LC 88-45465. ISBN 0-8119-0745-7. **pap.** $6.95.
A simple, accessible explanation of what it is, and how to cope with it.

SAYCE, Valerie & Ian Fraser. **Exercise Can Beat Your Arthritis.** Avery Publishing Group. May 1989. illus. index. LC 89-249. ISBN 0-89529-392-7. $9.95.
Head-to-toe workout for improving mobility and reducing pain.

SEMCHYSHYN, Stefan & Carol Colman. **How To Prevent Miscarriage and Other Crises of Pregnancy.** Collier: Macmillan. Jun. 1989. 224p. index. ISBN 0-02-609661-7. $17.95.
Explains causes of miscarriage and premature birth, and how many of them can be foreseen and dealt with. Excellent descriptions of danger signals, and how to respond to them.

SHIMBERG, Elaine Fantle. **Relief from IBS: Irritable Bowel Syndrome.** Evans, dist. by Holt. Jan. 1989. 246p. index. LC 88-17730. ISBN 0-87131-545-9. $18.95.
Sensitive coverage of how to cope with an attack, and how to lessen the stress that may trigger it.

SIMKIN, Penny. **The Birth Partner: Everything You Need To Know To Help a Woman Through Childbirth.** Harvard Common Pr., dist. by Kampmann & Co. 1989. 230p. illus. index. ISBN 1-55832-011-3. $16.95. **pap.** ISBN 1-55832-010-5. $8.95.
Exceptionally well-organized manual for preliminary study and on-the-spot reference.

WALLACE, Jean. **Arthritis Relief.** Rodale. Sept. 1988. ISBN 0-87857-832-3. $19.95.
Summarizes current knowledge of arthritis and modern medications and treatments.

WINSTEIN, Merryl. **Your Fertility Signals: Using Them To Achieve or Avoid Pregnancy Naturally.** Smooth Stone, dist. by Quality Bks. 1989. 159p. illus. index. ISBN 0-9619401-0-7. **pap.** $9.95.
Questions and answers about interpreting body temperature swings and the characteristics of cervical mucus in order to determine times when conception is likely.

YOUNG, Stuart H. with Susan A. & Martin D. Shulman. **The Asthma Handbook: A Complete Guide for Patients and Their Families.** Bantam. Aug. 1989. 368p. index. ISBN 0-553-34712-8. **pap.** $9.95.
Detailed information on the causes of asthma, particularly in children, and how to minimize environmental allergens.

HEALTH INFORMATION SERVICES

IN ONTARIO PUBLIC LIBRARIES

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HEALTH INFORMATION SERVICES IN ONTARIO PUBLIC LIBRARIES

ABSTRACT

The purpose of this survey was to explore the provision of health information in public libraries in Ontario. Seventy-five reference librarians from 43 libraries (library response rate 90%) returned the questionnaire. Health requests accounted for about 8% of all reference questions and came in daily and steadily. While the largest proportion of questions related to disease and medical treatment, a substantial number also dealt with health promotion, health policy and environmental issues and the health care system. The major problems faced by public librarians in providing health information were incomplete or unclear queries and inadequate collections. Librarians generally felt confident about their ability to provide health information without offering advice or interpretation. The provision of health information by public libraries has been largely unrecognized and underfunded. Recommendations for strengthening health information services in public libraries include: improving the quality of health collections; exploring the role of public libraries as disseminators of health promotion and illness prevention information in the community; developing referral networks between public libraries and health sciences libraries in hospitals and universities; and increasing the educational opportunities for public librarians to learn about health information sources. A list of consumer health resources is appended to this paper.

In recent years, there has been increasing recognition of the right of individuals and social groups to access health information. The report from Health and Welfare Canada entitled, "Achieving Health for All: A Framework for Health Promotion" (1986) demonstrates the leading role that Canada is playing in efforts to reach the World Health Organization goal of "Health for All by the Year 2000". The existence of this report and others at the provincial level suggests that it is time for libraries and librarians to take a renewed look at their role in the provision of health information. Improved access to health information by consumers can be a basis for: 1) better informed decision-making on personal health matters: 2) improvements in health-promoting and disease-preventing behaviours; and 3) greater public support of social policies designed to promote healthy environments.

Public libraries are ideal potential providers of health information because of their presence in most communities and because of their recognized social function as repositories of knowledge. The professional literature suggests that public libraries in North America and Europe have been aware of the need for consumer health information provision for some time and some excellent demonstration programs in both public and health sciences libraries have been described (Rees, 1982). Nevertheless, there has been no systematic national or provincial study of the provision of consumer health information in public libraries in Canada.

The following research questions were set out at the beginning of the study:

1. To what extent are Ontario public libraries currently involved in the provision of consumer health information?

2. What are the factors that facilitate or act as barriers to the provision of consumer health information by public libraries?

3. What is the nature of the health questions being asked by consumers and what public library or referral resources are used to answer these questions?

4. How could the provision of consumer health information in Ontario public libraries be improved?

As health information services for the public have developed in recent years, librarians have begun to refer to the service as "consumer health information", abbreviated as CHI. The phrase has been used by librarians to distinguish health information provided to the public from that provided to health professionals. While there has been a long tradition of medical and health sciences libraries providing information services for health care professionals, the idea of providing health information to the public is more recent. In this study, a broad definition of CHI was used. **CHI includes the provision of information related to personal health care, the health care system, self-help groups, disease prevention and health promotion, and health policy and environmental health issues.** Patient education is a related field to CHI which involves the provision of information as part of a planned educational program in an institutional setting such as a hospital or outpatient clinic. Patient information is the verbal or written information provided in the institutional context. The emphasis in patient education programs is usually on personal health care and illness prevention whereas CHI includes broader health policy and environmental issues.

There has been a steady stream of journal articles in the professional library literature in recent years discussing the provision of health information to consumers (e.g., Alloway, 1983; Beck, 1985; Prince, 1983; Vaillancourt, 1982; Kempson, 1984; Christie, 1986; Paterson, 1988; Beattie, 1988; Perry, 1988; Tabor, 1988). Early CHI programs involving public libraries centered primarily on improving public accessibility to health books and other materials through the development of networks, particularly between public and hospital libraries in the U.S. (Eakin, Jackson and Hannigan, 1980). Despite some of the differences in the information needs of consumers and providers of health services and the existence of materials specifically written for the layperson, there is still a considerable overlap in the literatures used by the two groups. This overlap likely accounts for the frequency of the cooperative arrangements between health sciences and public libraries noted in the literature. Librarians in both types of libraries report increasing demands for consumer health materials which neither type of library can completely satisfy. This problem is partially related to the scope of each type of collection as well as limitations on funds for purchasing library materials.

The first generation of consumer health information services got underway in reasonably affluent times in the seventies and early eighties, but many were pilot projects without continuing funding. Budget limitations in both public libraries and in the health care system have restricted the growth of formally funded programs but informal cooperative arrangements and services continue to develop in both Canada and the U.S. Unfortunatly, many of the initiatives appear to be dependent on the energy and enthusiasm of one or more dedicated librarians in a particular setting. Since library CHI networks and activities have not become universally supported and funded, there is a tendency for

librarians to think of the area as slow moving. Nevertheless, it is notable that Alan Rees is planning a second edition of his Developing Consumer Health Services that will include descriptions of twice as many exemplar programs as the first edition, as well as chapters on international developments in CHI.

METHODOLOGY

In March 1989, the chief executive officers of Ontario public libraries serving populations over 30,000 (n=48) were sent letters asking them to distribute questionnaires to reference librarians in the central library or largest branch concerning the provision of health information. The survey was designed so that the results could be compared with an earlier study on the provision of legal information in public libraries (Dewdney, et al., 1988). The comparison of legal and health information services will be discussed in a separate paper.

Depending on the size of the library, from two to four copies of the health services questionnaire and information sheet explaining the study were included in the package sent to each CEO along with a covering letter. CEO's were encouraged to make additional copies of the questionnaire as required. Follow-up letters and questionnaires were sent to the non-responding libraries one month after the initial mailing.

Sixty-nine completed questionnaires were received from the first mailing and an additional six from the follow-up. In all, 43 out of 48 libraries returned at least one questionnaire (response rate = 90%) and 75 individual questionnaires were received. The community size of the non-responding libraries varied: two were from communities serving populations of 30,001 to 50,000; two from 50,001 to 100,000; and one from 100,001 to 250,000.

Although the survey was sent to the entire population of public libraries serving over 30,000 people, there is no way of estimating the actual number of library staff eligible to participate in the survey; selection of appropriate staff was left up to the CEO involved. Nevertheless, the data provide a useful picture of the health information requests received in 90% of the libraries surveyed. All of the individual librarians responding to the questionnaire were anonymous and the public libraries are not identified. Over 50% (n=22) of the libraries returned one questionnaire; another 44% (n=19) returned two or three; and 4% (n=2) libraries returned five or six questionnaires.

The number of responses to the health survey from libraries serving different-sized communities is shown in Table 1.

TABLE 1: LIBRARIES AND LIBRARIANS RESPONDING ACCORDING TO COMMUNITY SIZE

Population	Number of Libraries		Number of librarians	
	n	%	n	%
30,001 to 50,000	13	30.2	17	26.6
50,001 to 100,000	13	30.2	21	28.0
100,001 to 250,000	8	18.6	15	20.0
Over 250,000	9	20.9	22	20.3
TOTAL	43	99.9	75	99.9

SURVEY RESULTS

In this study the questionnaires were returned by individual librarians: therefore the results represent the experiences and views of the librarians rather than the

libraries. All librarians reported that reference service to users was one of their professional duties but their responsibilities usually involved more than one function. Selection and acquisition of health materials were additional duties for over 70% of the librarians. Almost half said that they were also involved in the design and maintenance of the health collection and interlibrary loan. Forty per cent (n= 30) supervised staff who worked with health materials and almost one quarter were involved in public education related to health topics (e.g., organizing displays, special programs, talks, etc.). Just over 20% (n=16) of the respondents reported doing online searching themselves, although nearly one third (n=24) indicated that their library had access to MEDLINE, the major medical database produced by the U.S. National Library of Medicine.

While most librarians (94.7%, n=71) cited on-the-job experience as the way they had learned how to provide consumer health information, the comments showed that a combination of experience with actual health reference requests, advice from other librarians and knowledge of the collection were all essential for meeting users' health information needs. Public librarians also relied on the professional library literature to a considerable extent, particularly for collection development. Health information workshops outside the library were ranked as the second most helpful type of preparation after on-the-job experience.

Librarians' estimates of the frequency of health information questions appear in Table 2. Respondents noted that, even though the proportion of health questions appeared low, health and medical questions came in daily and steadily. Several librarians stated that this was one of the most important areas of reference service that they provided. Librarians also observed that many health questions did not reach the reference desk

because of the personal nature of the information required. These comments suggest that the estimates provided in Table 2 likely underestimate the actual proportion of health information searches made by users. The respondents observed that members of the public are becoming increasingly concerned with leading a healthy lifestyle. Many users want current information on topics such as stress, diet, fitness and cholesterol. Librarians also observed that people today are more likely to question doctors' advice and want the information that will allow them to participate more fully in decision-making about their own or a family member's health care.

TABLE 2: FREQUENCY OF HEALTH INFORMATION INQUIRIES

Frequency	n	%
Rarely or never (< 1%)	1	1.4
Occasionally (1 to 5%)	21	29.2
Quite often (6 to 10%)	34	47.2
Very often (> 10%)	16	22.2
TOTAL	72	100.0

Over half of the respondents 56% (n=41) reported that the number of health information requests had increased over the last three years. The remaining 44% (n= 32) of those who answered the question thought that the proportion had stayed about the same. No librarians reported a decline. The librarians were asked to estimate the proportion of health questions that fell into a number of categories as shown by the averages in Table 3. Disease or treatment information accounted for the largest proportion of the questions, followed by health promotion, then health policy and environmental questions.

TABLE 3: TYPES OF HEALTH ENQUIRIES RECEIVED

Type of question	Mean %	Median %	S.D.
Disease or treatment	41.7	35.0	17.8
Health promotion/prevention	23.9	20.0	13.8
Health policy/environment	13.5	10.0	8.7
Health care system	10.2	10.0	10.9
Self-help groups	6.4	5.0	4.4
Other	3.8	0.0	10.6

N=75

The categories of health questions for which librarians tended to report an increase were: 1) disease prevention or health promotion information (63.0%, n=46 reported an increase); 2) specific disease or medical treatment information (59.7%, n=43); and health policy or environmental health issues (59.7%, n=43). Categories of questions for which the demand has stayed about the same include: 1) health care system information (80.6%, n=58 reported that demand had stayed the same) and 2) information about self-help groups (79.2%, n=57). There were few reports of decreases in requests in any of the five categories of health questions. These results suggest that in areas where information is complex and varied (i.e., personal health information, health promotion, and health policy and environmental issues) that the library is playing an increasingly important role as an information source. For information on self-help groups and health care system, on the other hand, where the information need is more defined and there are other agencies which can also provide public information on the topic, indications are that the library is continuing to provide information, but not at the same increasing rate as the other

categories. There were numerous comments in the survey indicating that health professionals, health agencies and self-help groups referred people to the library for more in depth information.

Librarians estimated that over half of the health requests came from adult users seeking personal health information, another 40% came from school students doing assignments. The remaining 10% of requests came from representatives of community groups and other users. Even though the proportion of requests from community groups was relatively small, the activities of such groups affect a much larger proportion of the population. In order to prepare credible submissions for government agencies and other decision-making bodies, community groups need access to good information resources. The public library can play an important role for these community groups.

PROBLEMS ENCOUNTERED

One of the major goals of this study was to explore the types of problems experienced by librarians in answering health questions. The frequency of different problems reported is shown in Table 4. There appear to be three problems that occur relatively often: users present incomplete or unclear queries; the source is missing, unavailable or mutilated; and the library does not own the source that is needed. Other problems tend to occur only occasionally or rarely.

TABLE 4: FREQUENCY OF PROBLEMS REPORTED BY LIBRARIANS

Rank	Type of Problem	n	%	Mean	SD	N
1	User presents incomplete or unclear query	33	44.0	2.56	.76	75
2	Source is missing, unavailable	28	37.9	2.76	.95	74
3	Library does not own the source	22	29.7	2.81	.71	74
4	Librarian/user does not know enough	11	14.9	3.19	.77	74
5	Source does not exist (not yet published)	14	20.0	3.26	.88	70
6	Librarian fears wrong answer, advice	12	16.7	3.36	.92	72
7	Librarian unsure about conflicting sources	8	11.5	3.40	.86	70
8	Librarian unsure about referral procedures	6	8.2	3.69	.88	74
9	Librarian has difficulty using sources	1	1.4	4.0	.62	74

Note: the first two columns represent the number and percentage of librarians who described the problem as occuring "often" or "very often". Item means and standard deviations are provided on the basis of a 5-point scale where 1=very often, 2=often, 3=occasionally, 4=rarely and 5=never. N=the total number of librarians answering the question.

The top ranking problem was the inability or unwillingness of the user to present the question clearly enough for the librarian to understand what the user wanted to know. As mentioned earlier, health information needs can be a sensitive, where the user is reluctant to disclose details for fear of personal embarrassment or invasion of privacy. There was an indication in the study results that being unable to express health information needs was at least as important a problem as not wishing to disclose personal matters. This problem stems from the unfamiliar nature of many medical terms, in particular the disease and drug names used by health professionals. Despite some of the problems that consumers have in expressing their health information needs, librarians consistently commented that people were demanding more in depth information related to their medical care and treatment. In general, the problem in understanding the user's

information need appeared to be a much greater barrier to the provision of reference service than either lack of medical knowledge on the part of the librarian or inability to use health resources in the library collection.

Although librarians were confident about their ability to use the resources they had, there were indications that appropriate resources were not always available. The most common problem with the collection was the unavailability of materials because they were circulating or missing. There appeared to be a particular problem with vandalism and theft of health materials. Many librarians admitted that their library did not own materials that might be most useful. On the questionnaire, librarians were asked to indicate which of a list of health resources they believed to be in the collection. The librarians were encouraged to list additional works that they found useful in answering health questions. There were seven categories of resources: 1) standard medical reference books; 2) basic medical textbooks; 3) reference texts written for the layperson; 4) newsletters and magazines; 5) periodical indexes; 6) government publications; and 7) online databases. The sources were derived from existing core lists of consumer health materials and the authors' experience in providing health reference service.

Including the added titles in each category, there were a possible 68 sources that could be checked. The number of health titles checked by the librarians ranged from 5 to 44 with a mean of 18.8 (SD 8.1). As might be expected, the number of health titles in the collection correlated with the population served by the library ($r=.54$, $n=75$, $p<0.001$). There was no significant correlation between the level of professional experience reported by the librarians and their estimations of health collection size. This suggests that all of the librarians in the study were reasonably familiar with the health resources in the

collection, regardless of their level of experience. A number of librarians reported supplementing the health resources in their collections with vertical file materials such as pamphlets and clippings. Although these materials were useful, especially for providing information about self-help groups and local services, the lack of bibliographic control of these materials and their ephemeral nature made them difficult to manage.

The most common reference books available in public library collections included the Compendium of Pharmaceuticals and Specialties (CPS) produced by the Canadian Pharmaceutical Association (90.7%, n=68), the Canadian Hospital Directory (82.7%, n=62), the OHIP Schedule of Benefits (81.3%, n=61), and the Handbook of Non-Prescription Drugs (80.0%, n=60). Dorland's Medical Dictionary, the Merck Manual of Diagnosis and Therapy and the Canadian Medical Association Directory were also reported by over 70% of the librarians. Very few of the librarians reported having the two non-proprietary sources of drug information in their collections: Drug Facts and Comparisons and Martindale's.

Medical textbooks are often useful starting places for reference questions and online searches, however many public libraries reported that their collection policies did not allow them to purchase these publications. The most common text reported was Gray's Anatomy (94.7%, n=71), followed by Harrison's Textbook of Medicine (37.3%, n=28). Very few librarians reported having the other texts listed in the questionnaire in their collections. Several librarians commented that Scientific American Medicine, a textbook that is issued in looseleaf form, was an especially good source of up-to-date medical information.

Health and medical books specifically written for the layperson are widely available today and, judging by the space allotted to the subject in bookstores, they are big sellers. There was no attempt in this study to evaluate the overall collections of health materials in public libraries. The lay texts listed in the questionnaire were primarily reference-type works written especially for the layperson such as family medical guides, drug guides and health encyclopedias. Two-thirds of the librarians reported having one or more of these reference texts written for the layperson in their collection.

There are a number of excellent health newsletters published by medical schools as well as other magazines such as Medical Self Care and Healthsharing that have grown out of the consumer health movement. Less than 20% of the librarians reported that their library subscribed to any of these publications. The lack of periodicals and the indexes specifically devoted to health was notable in the study results. Only two librarians reported having Abridged Index Medicus, one reported having Cumulated Index to Nursing and Allied Health (CINAHL) and none had Consumer Health and Nutrition Index. Librarians comments indicated a reliance on general indexes such as Reader's Guide and Canadian Periodical Index for access to health periodical articles. Although the popular press includes a great many health articles, their coverage is not comprehensive. Furthermore, popular magazine articles may not provide the indepth information required by some consumers. Amongst health professionals, the periodical literature is considered to be the most up-to-date form of information so it is important to be able to access these sources. One librarian noted:

> Sometimes I don't know if information I have found is accurate because of the date of publication -- very up-to-date current research and new developments are hard to find out about -- we often have to go to periodicals but our indexes are not specific enough and we do not have the best periodicals.

The public libraries were quite well stocked with government publications relating to health. In all likelihood, this was because of the existing depository arrangement for such publications in public libraries. Some librarians also reported being aware of major health policy reports at the provincial and national levels, such as the Achieving Health for All (the Epp Report) (20.8%, n=16), The Health of Canadians: Report of the Canada Health Survey (53.2%, n=41); Towards a Shared Direction for Health in Ontario (the Evans Report) (51.9%, n=40) and Health for All Ontario (the Spasoff Report) (32.5%, n=25). Canadian government agencies are playing a leading role in the health promotion movement. These activities require that individuals and community groups be informed about health promotion programs and policies. The role of the public library in disseminating health information of this type is still largely unexplored.

Although online databases can be a useful source of up-to-date health information because they provide access to the periodical literature, few librarians reported that their library searched medical databases. MEDLINE reported available in the libraries of 31.1%, n=24 of the respondents; Consumer Drug Information Full-Text in 19.5%, n=15; Nursing and Allied Health in 20.8%, n=16; and Occupational Health and Safety in 15.6%, n=12. Again, librarians indicated that, when they did search online, they tended to rely on the general databases which provide access to the popular press. Public libraries have tended to be slower in adopting online searching than academic and special libraries because of the difficulties involved in passing on database charges to the user in the public library setting. There was also some reluctance to access medical databases expressed by public librarians because they felt it might increase interlibrary loan requests.

There were some comments on the questionnaire that databases on compact disk (CD-ROM) would facilitate electronic access to information by public libraries. Once the public library has subscribed to CD-ROM product, there are no online charges. Nevertheless it seems unlikely, given the substantial cost of CD-ROM, that public libraries would invest in any specialized health sources. A similar pattern to that observed with the use of periodical indexes, i.e. a reliance on general indexes but in database form, would likely continue without additional sources of funding.

The librarians in the study repeatedly emphasized the need for "mid-level" health materials that presented the subject in sufficient depth, but without excessive use of technical language. Currently available material is frequently either too brief and oversimplified or too technical, e.g.,

> There seems to be a lack of materials in our collection that fall between medical texts and oversimpilified popular material.
>
> We often feel the need for a better encyclopedia, and a good source of recent research and new developments beyond what is in "Medical and Health Annual".

Several librarians commented on the need for readable books on specific diseases other than the "big ones" such as heart disease, cancer and stroke. They also requested more frequent reviews of health titles in the sources used by public libraries for selection purposes. The need for "core lists" of health materials, particularly for branch libraries was emphasized. One librarian suggested that a regular column written by a Canadian health sciences librarian that would review current titles would be extremely useful. Evaluating the content of health books presented an ongoing problem for public librarians and they were anxious to have access to reviews by health professionals or librarians expert in the field.

In the seventies, when the health care consumer movement was in its early development, there was considerable concern among librarians that they would be asked to provide medical advice or interpretation by users. In this study, librarians no longer seemed to be greatly concerned about this issue. Most respondents appeared to make a clear distinction between providing printed information (the role of the library and the librarian) and advice and interpretation (the responsibility of the health professionals involved in the individual's care). Nevertheless, this potential problem elicited many specific comments from librarians about how they handled such situations, e.g.,

> I have no hesitation in providing any and all information to a patron while stressing that I cannot advise him, that he must either interpret it himself or seek the advice of a health professional.

The apparent confidence that librarians have about their role in providing health information may be a sign of the maturing of the librarians as professionals. Possibly the professional literature on the subject during recent years has helped to clarify the position of librarians regarding health information provision and has reduced some of the previous concern. The librarians' positions on how to handle conflicting sources of health or medical information was similar to that taken on the advice or interpretation issue. If conflicting evidence was found, the librarian was likely to show both documents to the user.

IMPROVING SERVICES

In the questionnaire, the librarians were asked what would help them most to improve their own service effectiveness with medical or health questions. There were three major needs mentioned by the 65 librarians who answered this question: 1) additional

resources to increase the size and currency of the health collection (mentioned by 34.4%, n=21); 2) assistance with collection development, including evaluation of the present collection and selection aids for new materials (32.8%, n=20); and 3) continuing education workshops (32.8%, n=20). Several librarians (8.2%, n=5) specifically mentioned the need for workshops on health care databases, including full-text files.

These priorities were different from the rankings of the training programs deemed to be most valuable for librarians with **no previous experience**, shown in Table 5. The librarians in the study had an average of 10.0 (S.D. 6.8) years of experience and the major needs described in the previous comments reflect the views of a group that had already acquired basic reference skills. The number one priority named for librarians without experience, however, was the ability to use health sciences resources effectively.

TABLE 5: NUMBER OF LIBRARIANS RATING
EDUCATIONAL PROGRAM TOPICS AS "MOST VALUABLE"

Program topic	n	%
How to use health reference materials	40	53.3
Collection development	24	32.0
Health reference interview	20	26.7
Ethical and legal aspects	7	9.3
Community health resources	4	5.3
Introduction to health care system	3	4.1
Other	1	1.3
TOTAL	99*	132.0*

*Note: The respondents (N=75) were asked to number each topic in order of how valuable it would be where 1="most valuable". Some respondents marked more than one program topic as "most valuable" which explains the total in the Table. Several librarians commented that all of the program topics were important.

On the basis of the literature on the provision of health information services and the comments made in this study additional suggestions for improving service can be made. The first is that the public library develop a **written reference policy for handling medical and health questions**. In the study, only 12% (n=9) of the librarians reported that they had a policy. There were several comments about the helpfulness of such a policy in clarifying the librarian's role and specifying referral procedures.

Another suggestion for improving service relates to the development of **formal referral networks between public libraries and hospital and health sciences libraries in the community**. The referral levels reported by the respondents were generally quite low, with only 17.3% (n=13) frequently giving referrals and only 6.7% (n=5) frequently receiving referrals. Most referrals were made to university health sciences libraries where these were available and, to a lesser extent, to a large reference library such as Metro Toronto. Specialized libraries such as the Addiction Research Foundation and the Canadian Centre for Occupational Health and Safety were also mentioned. The university health sciences libraries were clearly playing a central resource function for consumer health questions when medical materials were required. Only one librarian mentioned referral to a hospital library and another commented that hospital libraries were not available to the public in their community. The Kingston area has set an excellent example with their union list of consumer health materials in the university and hospital libraries, but more funding is required to support this initiative and more needs to be done in other Ontario communities. The British Columbia chapter of the Canadian Health Libraries Association has also developed a core list of consumer health materials (Health Libraries Association of B.C., 1983) and they are currently planning a computerized database.

The referrals received by public libraries, judging by the comments, were primarily via health professionals and community agencies who advised their clients to seek additional information on a health topic in the library. Several librarians also mentioned that nursing students were using their collections. Thus public libraries are serving a function within the health care system as sources of health information. Almost all of the librarians in the study (89.3%, n=67) thought that it would be useful for the public library to have networking arrangement with other health sciences libraries and community agencies.

RECOMMENDATIONS

On the basis of the numeric survey results and the comments made by the respondents, the following recommendations are made for improving the provision of health information service by public libraries in Ontario.

1. **Public library collections of health materials should be strengthened.** Health questions constitute a significant proportion of user enquiries in public libraries and health materials are heavily used, thus special attention should be paid to maintaining up-to-date, authoritative sources in this area. In addition to books written for the layperson, special attention should be paid to collecting key medical textbooks, specialized periodical indexes, health periodicals and vertical file materials. The fact that health materials are more likely to be missing or unavailable in the collection than are materials on other subjects should be taken into account in resource allocation and collection policy. A list of consumer health materials is appended to this paper.

2. The role of public libraries as disseminators of health promotion and illness prevention should be explored. As public institutions available in almost every community in Ontario, libraries are ideal disseminators of health information, yet libraries have not been able to tap into the funds being made available for health promotion and illness prevention through the provincial and federal government health ministries. Explorations should be made into these funding sources.

3. Public librarians and health sciences librarians should join together to develop local and regional referral networks for consumer health information. Clearly each type of library has a part to play in the provision of consumer health information. Current referral activities in most locations are minimal and could benefit from a more formal, funded program. A number of cooperative activities in addition to referral could be organized including cooperative collection development, review of health materials and continuing education workshops.

4. Priority should be given to the development of selection aids and tools for collection analysis that can be used by public libraries to manage their health collections. The professional library literature appears to play an important ongoing role in publishing core lists and other selection guidelines and in reviewing new health materials. These sources could also be supplemented by the librarians associated with the networks discussed in recommendation #3. Health sciences librarians are able to provide assistance in accessing and evaluating health materials for public librarians and public librarians are

excellent sources of local information on health organizations and community services.

5. Publishers and health organizations should be encouraged to make more works available for the layperson that are written in sufficient depth but without the technical language of the medical texts. Greater diversity of health and disease topics is also required, beyond the major health problems such as heart disease and cancer. There appears to be a major gap in the consumer health literature between the simple factual-type information presented in pamphlets and the indepth, technical information found in publications for health professionals. The increasingly well-educated health care consumer requires materials that are highly informative and comprehensive, but which are also written in non-technical language.

6. Ongoing workshops and other forms of continuing education for public librarians dealing with the provision of health information should be organized. The responsibility for these activities lies both with the library schools and professional organizations such as Ontario Library Association, the Canadian Library Association and the Canadian Health Libraries Association. Various government departments responsible for the provision of library services and health care services may also be willing to support such activities. This would also be a useful activity for the library networks in recommendation #3. The workshops should emphasize health materials for the collection, including instruction in the use of online medical databases, both bibliographic and full text. A component on consumer health information services should be included in library school courses in the health sciences and other courses that are taken by future public

librarians.

CONCLUSION

This report has presented an overview of the results of a survey of the provision of consumer health information in Ontario public libraries. On the basis of the results, a number of specific recommendations have been made for strengthening CHI services. It is evident from the results that any substantial improvement in CHI services will require a cooperative effort of public librarians, health sciences librarians, government ministries, professional organizations and university faculties of library and information science. Together these groups have the ability to improve the resources for the provision of health information to the public. Particular efforts must be made by libraries and librarians to create linkages with both federal and provincial government health ministries that have mandates to improve the dissemination of health information. This multi-sectoral cooperation is not easy to achieve and will require considerable energy and creativity. "Health for All in the Year 2000" should include "Health **Information** for All" and public libraries are in a unique position to make this possible.

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Tabor RB. Integrated information for health care. **Information Services and Use** 1988;8(1):13-21.

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CONSUMER HEALTH INFORMATION RESOURCES

Compiled by
Joanne Marshall, Caroline Sewards and Elizabeth Dilworth

The following list is based on the items in the study questionnaire which were considered to be basic resources for health sciences collections in public libraries as well as additional titles that the respondents considered to be useful in providing consumer health information services. Prices are in U.S. dollars unless otherwise noted. The list is arranged in the following manner:

Reference Books (Health and Medical)
- Dictionaries and encyclopedias
- Directories
- Drugs
- Other reference books

Basic Medical Textbooks
General Reference Books Written for the Layperson
Books on Drugs Written for the Layperson
Other Books Written for the Layperson
Newsletters and Periodicals
General Periodical Indexes
Health Periodical Indexes
Government Publications

REFERENCE BOOKS (HEALTH AND MEDICAL)

Dictionaries and Encyclopedias

Black's Medical Dictionary. 35th ed. C.W. Havard, editor. New York: Harper & Row. 1987. $36.95

Blakiston's Gould Medical Dictionary. 4th ed. Alfonso R. Gennaro. et al.. editors. New York: McGraw-Hill, 1979. $39.00

Dictionary of Medical Symptoms. Rev. Ed. By Joan Gomez. New York: Stein and Day, 1983. $NA

Dictionary of Medical Syndromes. 2nd ed. By Sergio Magalini and Euclide Scrascia. Philadelphia: Lippincott, 1981. $56.00

Dictionary of Psychotherapy. By Sue Walrond-Skinner. New York: Routledge & Kegan Paul, 1986. $59.95

Dorland's Illustrated Medical Dictionary. 27th ed. Philadelphia: Saunders. 1988. $38.95

Elsevier's Medical Dictionary in Five Languages. 2nd Rev. Ed. A. Slosberg, editor. New York: Elsevier, 1975. $263.25

Encyclopedia & Dictionary of Medicine, Nursing & Allied Health. 4th ed. By Benjamin F. Miller and Claire B Keane. Philadelphia: Saunders, 1987. $24.95

International Dictionary of Medicine and Biology. New York: Wiley, 1986. 3 vols. SNA

Merck Manual of Diagnosis and Therapy. 15th ed. Robert Berkow, editor. Rathway, NJ: Merck, 1987. $21.50

Oxford Companion to Medicine. John Walton, et al., editors. New York: Oxford University Press, 1986. 2 vols. $95.00

Physics in Medicine & Biology Encyclopedia. New York: Pergamon Press, 1986.

Stedman's Medical Dictionary. 24th ed. By Thomas Lathrop Stedman. Baltimore, MD: Williams & Wilkins, 1981. $36.95

Taber's Cyclopedic Medical Dictionary. 16th ed. Philadelphia: Davis, 1989. $25.95

Directories

Canadian Handbook of Medical & Surgical Specialists. Don Mills: Southam Communications, 1987. $NA. annual

Canadian Hospital Directory. Toronto: Canadian Hospital Association, 1988. $90.00 cdn. (members $80.00) annual

Canadian Medical Directory. Anne Newcomb, editor. Toronto: Seccombe House, 1987. $125.00

Directory of Alcohol and Drug Treatment Resources in Ontario, 1986. Toronto: Addiction Research Foundation, 1986.

Directory of Medical Specialists. 23rd ed. Chicago: Marquis-Who's Who, 1987. 3 vols. $265.00

Encyclopedia of Medical Organizations & Agencies. 2nd ed. Anthony T. Kruzas et al., editors. Detroit: Gale, 1986. $185.00

Drugs

American Medical Association Drug Evaluations. 6th ed. American Medical Association, Department of Drugs Staff. Philadelphia: Saunders, 1987. $75.00

Compendium of Pharmaceuticals and Specialities. 23rd ed. Carmen Krogh, editor. Toronto: Canadian Pharmaceutical Association, 1988. $71.00 cdn. annual

Drug Facts and Comparisons. By Erwin K. Kastrup and Bernie Olan III. Philadelphia: Lippincott, 1989. $69.50

Drug Interactions Handbook. Englewood Cliffs, NJ: Prentice Hall, 1984. $19.95

Drugs and Drug Abuse: A Reference Text. 2nd ed. Toronto: Addiction Research Foundation, 1987. $NA

Family Physician's Compendium of Drug Therapy. New York: McGraw-Hill, 1988. $29.95

Handbook of Non-Prescription Drugs. 8th ed. Edward G. Feldman, editor. Washington, D.C.: American Pharmaceutical Association, 1986. $70.00

Martindale: Extra Pharmacopoeia. 28th ed. James E.F. Reynolds, editor. London: The Pharmaceutical Press, 1982. $130.00

Merck Index: An Encyclopedia of Chemicals and Drugs and Biologicals. 10th ed. Rathway, NJ: Merck, 1983. $NA

Meyler's Side Effect of Drugs: An Encyclopedia of Adverse Reactions and Interactions. 11th ed. New York: Elsevier, 1988. $111.50

Physicians' Desk Reference. 42nd ed. Ed Barnhart, editor. Oradell, NJ: Medical Economics Books, 1988. $38.95 annual

Physician's Desk Reference for Non-Prescription Drugs. 10th ed. Oradell, N.J.: Medical Economics Books, 1989. $24.95

Self-Medication: A Reference For Health Professionals. 3rd ed. Ottawa: Canadian Pharmaceutical Association, 1988. $NA

USP Dispensing Information. (USP DI). Rockville, MD: United States Pharmacopeial Convention, 1988. 3 vols. $120.00

Other Reference Books

American Cancer Society's Complete Book of Cancer: Prevention, Detection, Diagnosis, Treatment, Rehabilitation, Cure. American Cancer Society Staff. New York: Doubleday, 1986. $24.95

CIBA Collection of Medical Illustrations. By Frank H. Netter. West Caldwell, NJ: CIBA Pharmaceutical Co. 7 vols. $429.00

Cancer Reference Book. Paul M. Levitt, et al., editors. New York: Facts on File, 1983. $18.95.

Dangerous Properties of Industrial Materials. 7th ed. By N. Irving Sax. New York: Van Nostrand Reinhold, 1989. 3 vols. $NA

Handbook of Poisoning. 12th ed. Norwalk, Conn: Appleton & Lange, 1987. $16.50

Handbook of Toxic and Hazardous Chemicals & Carcinogens. 2nd ed. Marshall Sittig, editor. Park Ridge, NJ: Noyes Publications, 1985. $NA

International Classification of Diseases. New York: Revisionist Press, 1984. 3 vols. $120.00

Medical and Health Annual. Ellen Bernstein, editor. Chicago: Encyclopaedia Britannica. $24.95 annual

Nutrition Desk Reference. New Canaan, CT: Keats, 1985. $29.95

Patty's Industrial Hygiene and Toxicology. 3rd ed. By G.D. Clayton and F.E. Clayton. New York: Wiley, 1985. set $708.00

Professional Guide to Diseases. 2nd ed. By Helen Hamilton and Barbara McVan. Springhouse, PA: Springhouse Publications, 1987. $27.95

BASIC MEDICAL TEXTBOOKS

American Handbook of Psychiatry. 2nd ed. By Silvano Arieti. New York: Basic Books, 1986.

Anatomy of the Human Body. 30th ed. By Henry Gray. Philadelphia: Lea & Febiger, 1985. $79.50

Best and Taylor's Physiological Basis of Medical Practice. 11th ed. Baltimore, MD: Williams & Wilkins, 1985. $49.95

Campbell's Operative Orthopaedics. 7th ed. St. Louis: Mosby, 1986. $345.00

Casarett and Doull's Toxicology. 3rd ed. New York: Macmillan, 1986. $NA

Cecil Textbook of Medicine. 18th ed. Philadelphia: Saunders, 1988. 2 vols. $124.25.

Clinical Toxicology of Commercial Products: Acute Poisoning. 5th ed. Baltimore, MD: Williams & Wilkins, 1984. $122.95

Comprehensive Textbook of Psychiatry. Harold I. Kaplan and Benjamin J. Sadock, editors. Baltimore, MD: Williams & Wilkins, 1989. $182.50

Conn's Current Therapy. Robert E. Rakel, editor. Philadelphia: W.B. Saunders, 1989. $NA

Current Geriatric Therapy. Philadelphia: Saunders, 1984. $60.00

Current Medical Diagnosis & Treatment. 26th ed. Norwalk, Conn: Appleton & Lange, 1987. $32.50 pap.

Current Obstetric & Gynecologic Diagnosis & Treatment. 6th ed. Norwalk, Conn: Appleton & Lange, 1987. $34.50

Current Pediatric Diagnosis & Treatment. 9th ed. Philadelphia: Appleton & Lange, 1987. $31.50

Current Pediatric Therapy. 13th ed. By Sydney S. Gellis and Benjamin M. Kagan. Philadelphia: Saunders, 1986. $65.00

Current Surgical Diagnosis & Treatment. 8th ed. Lawrence W. Way, editor. Norwalk, Conn: Appleton & Lange, 1988. $34.50

Davidson's Principles and Practices of Medicine: A Textbook for Students and Doctors. New York: Churchill Livingstone, 1987. $46.00

Drug Abuse: Clinical and Basic Aspects. St. Louis: Mosby, 1977. $NA

Essential Endocrinology: A Primer for Non-Specialists. New York: Plenum Medical Book Co., 1986. $49.50.

Goodman & Gilman's The Pharmacological Basis of Therapeutics. 6th ed. New York: Macmillan, 1980. $NA

Grant's Atlas of Anatomy. 9th ed. Baltimore: Williams & Wilkins, 1989. $38.50

Handbook of Nursing Diagnosis. 2nd ed. Philadelphia: Lippincott, 1987. $13.95

Harrison's Principles of Internal Medicine. 11th ed. New York: McGraw-Hill. 1987. 2 vols. $110.00

The Heart. 6th ed. J. Willis Hurst, et al., editors. New York: McGraw-Hill, 1985. 1 vol. $99.00; 2 vols. $115.00

Lippincott Manual of Nursing Practice. 4th ed. By Lillian S. Brunner. Philadelphia: Lippincott, 1986. $47.00

Lynch's Medical Laboratory Technology. 4th ed. Philadelphia: Saunders, 1983. $58.00

Mosby's Pharmacology in Nursing. 17th ed. By Leda M. McKenny. St. Louis: Mosby, 1989. SNA

Novak's Textbook of Gynecology. 11th ed. By Edmund R. Novak. Baltimore, MD: Williams & Wilkins, 1988.

Oxford Textbook of Medicine. 2nd ed. New York: Oxford University Press. 1987. 2 vols. $165.00

Pathologic Basis of Disease: A Self-Assessment and Review. 2nd ed. By Carolyn Compton. Philadelphia: Saunders, 1986. $19.95

Principles of Surgery. 5th ed. By Seymour I. Schwartz, et al. New York: McGraw-Hill, 1989. 1 vol. text $85.00; 2 vols. $110.00.

Public Health and Medicine Review. 2nd ed. Norwalk, Conn: Appleton & Lange. 1984. $17.95

Scientific American Medicine. New York: Scientific American, Inc., 1986. Looseleaf text updated monthly $245.00

Textbook of Medical Physiology. 7th ed. By Arthur C. Guyton. Philadelphia: Saunders. 1986. $55.00

Williams Obstetrics. 17th ed. Norwalk, Conn: Appleton & Lange. $69.95. To be published.

GENERAL REFERENCE BOOKS WRITTEN FOR THE LAYPERSON

American Medical Association Family Medical Guide. rev. ed. New York: Random House, 1987. $29.95

Columbia University College of Physicians and Surgeons Complete Home Medical Guide. New York: Crown, 1985. $39.95

Complete Guide to Symptoms, Illness and Surgery. By Griffith H. Winter. Los Angeles: Price Stern, 1985. $12.95

Fishbein's Illustrated Medical and Health Encyclopedia. By Morris and Justin Fishbein. Westport, Conn: H.S. Stuttman, 1981. 22 vols.

Human Body on File. New York: Facts on File, 1983. $145.00

Illustrated Family Health Encyclopedia. Freeport, NJ: Marshall Cavendish, 1986. 24 vols. $334.95

Jane Brody's The New York Times Guide to Personal Health. By Jane Brody. New York: Times Books, 1982. $19.95

Med Tech: The Layperson's Guide to Today's Medical Miracles. New York: Harper & Row, 1985. $19.45

The Medicine Show: Consumers Union's Practical Guide to Some Every Day Health Problems. 5th ed. New York: Pantheon Books, 1980.

New Child Health Encyclopedia. By Boston Children's Hospital Staff. New York: Delacorte, 1987. $39.95

New Good Housekeeping Family Health and Medical Guide. Rev. Ed. New York: Hearst Books, 1988. $24.95

People's Medical Manual: Everything You Need to Know about Health and Safety. By Howard R. Lewis and Martha E. Lewis. Garden City, NY: Doubleday, 1986. $19.95.

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Prentice-Hall Dictionary of Nutrition and Health. Englewood Cliffs, NJ: Prentice-Hall. 1985. $21.95.

Prevention's New Encyclopedia of Common Diseases. Bill Gottlieb, editor. Emmaus, PA: Rodale Press, 1984. $21.95.

Where does it Hurt? A Guide to Symptoms and Illnesses. New York: Facts on File, 1983. $17.95

World Book Illustrated Home Medical Encyclopedia. Chicago: World Book-Childcraft International, 1984. 4 vols. $NA

BOOKS ON DRUGS WRITTEN FOR THE LAYPERSON

Complete Guide to Prescription & Non-Prescription Drugs. 6th ed. By Griffith Winter. Los Angeles: Price Stern, 1989. $14.95

Drug and Alcohol Law for Canadians. By Robert M. Solomon. Toronto: Addiction Research Foundation, 1986.

Drug Information for the Consumer. New York: Consumer Reports, 1987. $25.00

Essential Guide to Non-Prescription Drugs. By David P. Zimmerman. New York: Harper & Row, 1983. $27.00

Essential Guide to Prescription Drugs: Everything You Need to Know About Safe Drug Use. By James W. Long. New York: Harper & Row, 1988. $27.50

Guide to Prescription and Over-the Counter Drugs: Brand-name Drugs, Generic Drugs, Vitamins, Minerals, Food Additives. American Medical Association Staff. New York: Random House, 1988. $25.00

Joe Graedon's New People's Pharmacy: Drug Breakthroughs of the '80's. New York: Bantam, 1985. $8.95

OTHER BOOKS WRITTEN FOR THE LAYPERSON

Canadian Patient's Book of Rights. By L.E. Rozovsky. Toronto: Doubleday, 1980. $9.95 cdn.

Columbia Encyclopedia of Nutrition. Myron Winick, M.D., editor. New York: G.P. Putnam's Sons, 1988. $19.95.

Complete Book of Medical Tests: A Lifetime Guide for You and Your Family. New York: Norton, 1984. $17.50

Complete Guide to Medical Tests. By Griffith H. Winter. Tucson, AZ: Fisher Books. 1988. $17.95

Everyman Companion to Food and Nutrition. By Sheila Bingham. London: Dent. 1987. L25

Jane Brody's Nutrition Book. By Jane Brody. New York: Bantam, 1987. $12.95

Maier's Cocaine Addiction. By Hans W. Maier. Toronto: Addiction Research Foundation, 1987.

The New Drinkers: Teenage Use and Abuse of Alcohol. 2nd ed. By Reginald George Smart. Toronto: Addiction Research Foundation, 1980.

The New Our Bodies, Ourselves. 2nd ed. By Boston Women's Health Collective. New York: Simon & Schuster, 1984. $NA

Patient's Guide to Medical Tests. 3rd ed. By Cathy Pickney. New York: Facts on File, 1986. $21.95

People's Book of Medical Tests. By David S. Sobel and Tom Ferguson. New York: Summit Books, 1985. $12.95

Pregnancy and Childbirth: The Complete Guide for a New Life. New York: Avon, 1984. $10.95

Surgery on File: General Surgery. New York: Facts on File, 1988. $75.00

Surgery on File: Pediatrics. New York: Facts on File, 1988. $75.00

Toxic and Hazardous Materials: A Sourcebook and Guide to Information Sources. James Webster, editor. Westport, CT: Greenwood Press, 1987. $49.95

NEWSLETTERS AND PERIODICALS

Addiction Research Foundation. Journal. Toronto: Addiction Research Foundation of Ontario. monthly $16.00 cdn.

American Family Physician. Kansas City, MO: American Academy of Family Physicians. monthly. $45.00

American Health: Fitness of Body and Mind. New York: American Health Partners. monthly $14.95.

American Journal of Nursing. New York: American Nurses' Association. American Journal of Nursing Co. monthly $30.00.

American Journal of Public Health. Washington, DC.: American Public Health Association. monthly $60.00.

American Nurse Newspaper. Kansas City, MO: American Nurses Association. 10/yr $15.00.

Canada Diseases Weekly Report. Ottawa: Department of National Health and Welfare laboratory Centre for Disease Control. weekly. $NA

Canada's Mental Health. Ottawa: Department of National Health & Welfare, Health Services & Promotion Branch. quarterly. free.

Canadian Journal of Public Health. Ottawa: Canadian Public Health Association. bi-monthly. $38.00 cdn

Canadian Medical Association Journal. Ottawa: Canadian Medical Association. semi-monthly. $57.00 cdn

Canadian Nurse. Ottawa: Canadian Nurses Association. 11/yr. $30.00 cdn.

FDA Consumer. Rockville, MD: US Food and Drug Administrative Office of Public Affairs. monthly (except Jl-Aug, Dec-Jan) $9.50.

Harvard Medical School Health Letter. Cambridge, Mass: Harvard Medical School. monthly. $18.00.

Hastings Center Report. Briarcliff Manor, NY: Hastings Center. bi-monthly. $55.00.

Health: The Magazine for Total Wellbeing. NY: Family Media Inc, Women's Fashion Group. monthly $22.00.

Health Facts. NY: Center for Medical Consumers. monthly. $18.00.

Health News. Toronto: Faculty of Medicine, University of Toronto. bi-monthly. $14.95 cdn

Health Promotion. Ottawa: Department of National Health and Welfare. quarterly. free.

Healthsharing: A Canadian Women's Health Quarterly. Toronto: Women Healthsharing Inc. quarterly $17.00 cdn for institutions.

Hippocrates: The Magazine of Health and Medicine. Sausalito, CA: Hippocrates Inc. bimonthly $18.00.

JAMA: Journal of the American Medical Association. Chicago: American Medical Association. weekly $58.00.

Lancet. London: Lancet Ltd. weekly $68.00.

Mayo Clinic Health Letter. Rochester, MN: Mayo Clinic. monthly $24.00.

Medical Research Council Newsletter. Ottawa: Medical Research Council of Canada. quarterly. free.

Medical Self-Care. Pt. Reyer, CA: Medical Self-Care Magazine, Inc. 6/yr. $15.00

Natural Health Bulletin. Princeton, NJ: Princeton Educational Publishers. monthly $40.00.

New England Journal of Medicine. Waltham, MA: Massachusetts Medical Society. weekly. $69.00.

Nursing Quebec. Montreal: Order of Nurses of Quebec. 6/yr. with membership.

Nutrition Today. Baltimore, MD: Williams & Wilkins. bi-monthly $36.00.

Prevention. Emmaus, PA: Rodale Press, Inc. monthly. $12.00.

Progress Against Cancer. Toronto: Canadian Cancer Society, quarterly. free.

RN: National Magazine for Nurses. Oradell, NJ: Medical Economics Co. Inc. monthly $30.00.

Today's Health. Toronto: Daycal Publishing, bi-monthly $10.95.

L'Union medicale du Canada. Montreal: Association des Medecins de Langue Francaise du Canada. monthly $60.00

World Health. Geneva: World Health Organization. 10/yr. $17.00.

GENERAL PERIODICAL INDEXES USED TO LOCATE HEALTH INFORMATION

Applied Science and Technology Index. New York: H.W. Wilson, 1913-.

Canadian Magazine Index. Toronto: Micromedia, 1985-.

Canadian Newspaper Index. Toronto: Micromedia, 1977-.

Canadian Periodical Index. Toronto: InfoGlobe, 1920-.

General Science Index. New York: H.W. Wilson, 1978-.

Readers' Guide to Periodical Literature. New York: H.W. Wilson, 1900-

HEALTH PERIODICAL INDEXES

Abridged Index Medicus. Bethesda, MD: U.S. National Library of Medicine, 1970-.

Consumer Health and Nutrition Index. Phoenix, AZ: Oryx Press, 1985-.

Cumulated Index to Nursing & Allied Health Literature. (CINAHL) Glendale, CA: Glendale Adventist Medical Center, 1961-.

GOVERNMENT PUBLICATIONS

Achieving Health for All: A Framework for Health Promotion. By Health and Welfare Canada. Ottawa: Minister of Supply and Services Canada, 1986. [Epp Report]

Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures. Statistics Canada. Nosology Reference Centre. 2nd printing. Ottawa: Ministry of Supply and Services Canada, 1986.

Canadian Drug Identification Guide/ Code canadien d'identification des drogues. Ottawa: Health and Welfare Canada, 1972-.

Cancer in Canada. Ottawa: Statistics Canada, 1979-. v. (looseleaf)

Drug Benefit Formulary. Toronto: Ontario Ministry of Health, 1974-. annual

Final Report of the Task Force to Review Primary Health Care. Ontario Task Force to Review Health Care. [Toronto]: Ontario Ministry of Health, [1982]

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Health Care: The 80's and Beyond: Seeking Consensus. Toronto: Ministry of Health, 1983.

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The Health of Canadians: Report of the Canada Health Survey. By Canadian Health Survey. Ottawa: The Survey, 1981.

Health Promotion Matters in Ontario. Ontario Minister's Advisory Group on Health Promotion. [Toronto: Advisory Group], 1987. (Podborski Report)

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Mental Health Statistics. Ottawa: Statistics Canada.

OHIP Practitioner Care Statistics. Toronto: Ontario Ministry of Health, 1973/74-.

Ontario Health Insurance Plan Schedule of Benefits by Alpha Numeric Listing of Benefit Codes with Abbreviated Service Description of Physician Services. 1987.

Perspectives on Health. By Janet Abelson. Ottawa: Statistics Canada, 1983.

Reproductive Care: Towards the 1990's: Second Report of the Advisory Committee. Ontario Advisory Committee on Reproductive Care. [Toronto: The Committee, 1987?]

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World Health Statistics Annual. Geneva: World Health Organization, 1963-. annual

REPORT ON THE 1989 SURVEY OF THE PRESCRIBING EXPERIENCES AND ATTITUDES TOWARD PRESCRIPTION DRUGS OF ONTARIO PHYSICIANS

Prepared for
Pharmaceutical Inquiry of Ontario
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EXECUTIVE SUMMARY

This monograph reports the results of a representative sample survey of 842 Ontario physicians conducted by the authors between April and July 1989. The survey was commissioned by the Pharmaceutical Inquiry of Ontario, chaired by Dr. Frederick Lowy, under its mandate from the Minister of Health to inquire into all aspects of the government's role and influence in the prescription drug marketplace. The survey was designed in consultation with the Inquiry and representatives of the Ontario Medical Association and the College of Physicians and Surgeons of Ontario. The results document physicians' experiences with and knowledge about prescription drugs, their evaluations of factors leading to increased drug utilization, and levels of support for policy strategies aimed at monitoring and improving drug use.

1. Medical Education and Professional Information

Majorities of physicians are satisfied with their undergraduate and graduate medical education as preparation for prescribing drugs in their own practices. This positive assessment is shared by younger and older physicians, men and women, specialists and general practitioners, physicians in different practice settings, and those who prescribe in different volume.

However, physicians are less satisfied with their current knowledge in key areas related to prescribing, suggesting the limits of conventional medical education in a field which is constantly and rapidly changing with developments in diagnostic and curative technology. While six in ten physicians are satisfied with their ability to judge drug effectiveness, less than a third are satisfied with their knowledge of equivalencies of similar drugs, equivalencies of different brands of a drug, and non-drug alternatives. Less than a fifth of all physicians are satisfied with their knowledge of drug costs. These findings suggest that prescribing decisions will tend to be made within a limited range of information about the effectiveness of drugs which physicians are already familiar with, thus reducing or precluding the possibility that more cost-effective or non-pharmacological alternatives will be utilized.

While pointing to deficiencies in their current knowledge about prescription drugs, physicians cite few impediments to "keeping up." Only minorities of physicians indicate that information sources about prescription drugs are inadequate or that they distrust the information available to them. Only slightly more than a quarter suggest that the rate of introduction of new drugs constitutes a problem. However, a third of all physicians and half of the heaviest prescribers identify "lack of time" as an important problem in this context. Problems with knowledge about prescription drugs may thus be rooted less in the weaknesses of formal medical education, than in the demands of medical practice itself, and particularly, in the difficulty of maintaining the currency of professional knowledge while managing large workloads. This finding may also constitute an important qualification to physicians' support for Continuing Medical Education courses. Although such courses are almost universally approved in principle by physicians in the survey, in practice lack of time may be an important constraint on their participation.

2. Information Sources

The data indicate that many Ontario physicians are involved in activities which may serve as important sources of information about prescribing generally and about their own prescribing practices more specifically. For instance, physicians report that they attended about three profession-sponsored seminars and two Continuing Medical Education courses in the two years before the survey. Other potential profession-related sources of information remain relatively underdeveloped: few physicians have participated in hospital-based drug trials or have had their practices reviewed by the profession or government, and contacts between physicians and pharmacists about prescribing decisions are rare averaging about two such contacts a year.

In comparison, contacts between physicians and the pharmaceutical industry are more frequent. The average physician attends roughly twice as many industry-sponsored seminars about prescription drugs as seminars sponsored by the profession and has extensive contacts with the industry through "detail men" whose primary function, as the title

suggests, is to provide physicians with details of the products their companies market in order to increase the sales of those products. Even though physicians tend to rate industry contacts as relatively unimportant sources of information in their practices, the sheer volume of such contacts may nevertheless ensure that they have an impact on prescribing. High volume prescribers report significantly more frequent contacts with the pharmaceutical industry.

The apparently greater attractiveness of industry-related events and contacts may be in part related to the range of "perks" offered to physicians. Majorities of Ontario physicians report that they receive meals and stationery from industry sources. Small numbers report the receipt of more significant benefits including conference fees, travel expenses and computer hardware and software. Frequency of industry contacts, range of benefits received and prescription volume are positively intercorrelated.

3. Attitudes and Experiences in Practice

Ontario physicians conduct an average of 96 patient-visits and write 54 prescriptions during a typical week in practice. Thus, about half of all patient-visits result in prescriptions. General practitioners and older physicians, males, physicians in private group practices and those paid through fee-for-service tend to prescribe in larger volume than specialists, younger physicians, women, physicians in hospitals and CHC/HSOs, and those paid through salary or capitation.

There is disagreement within the profession about the implications and results of prescription drug utilization. Only about half of the physicians in the survey agree that the dollars spent on prescription drugs in Ontario over the past ten years have had a positive effect on health status. The roots of this response may be found in physicians' assessments of factors influencing drug utilization. On the one hand, physicians indicate that these roots lie in the expansion of natural demand, in an increase in the number of elderly, and in the greater availability of new drugs and "hi tech" drugs used to treat illness. Another source of demand, however, is seen to be located outside of the sphere of clinical diagnosis and

treatment, in the expansion of public drug plans and in the decline of personal responsibility for health. To the extent that these latter factors are seen by physicians to cause increases in prescription drug utilization, prescriptions may be viewed as having a less direct impact on health.

However, it is not the case that physicians see increased drug utilization simply as a function of patient demand stimulated by greater access to drug benefit plans. Half of those surveyed indicate that physicians place too much emphasis on prescription drugs when treating their patients. Only about one in ten physicians say that patient demand is an important influence on their prescribing decisions or that they are motivated by the related needs "to do something" or to practice defensive medicine. Further, physicians report relatively few requests from patients for drugs without consideration of the patient's condition. Instead, physicians indicate that their own assessments of the patient's economic situation and access to a drug plan play an important role in their prescribing decisions.

Ineffective drugs may also tend to reduce the positive effects of drug therapies. Physicians report that about a quarter of the drugs they are familiar with do not produce results commensurate with their costs.

About half the time prescriptions are accompanied by reviews of the patient's medical situation, and in about a fifth of all cases physicians say they recommend reductions in drug use. However, physicians with the largest volume practices who write the most prescriptions are significantly less likely to engage their patients in reviews or discussions of drug use or to recommend reductions, suggesting that a significant proportion of the prescriptions written in the province are not accompanied by review or counselling. This also suggests, once again, that lack of time may have an important influence on prescribing patterns, and that physicians in large volume practices may have less time to spend counselling their patients about therapies or considering alternatives.

4. Policy Strategies

A majority of physicians indicate that the comprehensiveness of the Ontario Drug Benefit program should be reduced by removing coverage of over-the-counter drugs, and limiting coverage of prescription drugs. A majority also indicate that an annual patient co-payment should be introduced under ODB presumably to increase the direct financial liability of patients in order to reduce inappropriate use. A large proportion of Ontario physicians also support the introduction of a computerized "smart card" which would contain an electronic record of the patient's medical history and drug use.

Only a small number of physicians take the position that the extended patent protection granted to the pharmaceutical companies under recent federal legislation should be reduced. Nevertheless, there is substantial support for strategies to regulate the behaviour of pharmaceutical companies in the marketplace. For instance, a majority agree that prescription drug advertisements should be required to include information about costs and effects. A majority also approve of the suggestion that new drug products should be licensed only if they can be shown to constitute improvements over existing products. And almost half of the respondents indicate that companies should be required to publicly register benefits given to public officials or physicians.

Physicians strongly support strategies which would strengthen pharmacists' professional obligations toward them and their patients. Almost all respondents take the position that pharmacists should be required to report suspected cases of prescription drug abuse to the physician. A substantial majority also indicate that pharmacists should have to report to the patient all instances of prescription drug substitution, while at the same time requiring pharmacists to substitute generic drugs when not specifically ordered not to do so by prescribers. Physicians also express strong support for a computerized drug information system for recording and linking information about prescribing, dispensing and utilization.

Majorities of physicians also approve of strategies which involve review of medical practice. Besides expressing very strong support for continuing medical education courses on prescription drugs, substantial proportions of physicians support the introduction of a

professional review system and the use of hospital committees to monitor prescribing practices. However, physicians are less willing to accept strategies which may be seen to imply review and regulation of their own practices. Less than half of the respondents approve of the relatively simple step of requiring the physician's identification to be recorded on all prescriptions dispensed under their orders, or random audits of physicians' practices. It is noteworthy that high volume prescribers are systematically less supportive than other physicians of policies which imply review or regulation of prescribing patterns.

CHAPTER 1

INTRODUCTION

The Pharmaceutical Inquiry of Ontario, chaired by Dr. Frederick Lowy, was established by the Minister of Health in March, 1988 to study all aspects of the government's role and influence in the prescription drug marketplace. The Inquiry's mandate called for an examination of the quality of prescribing, the costs of drug benefit programs, and patterns of prescription drug utilization in Ontario. The Inquiry was established after review of the Goldberg drug utilization report (Carruthers, Goldberg et. al., 1987) which found evidence that drug waste and misuse of medications by patients is a world-wide problem, and that Canadians are among the highest users of prescription drugs. In Ontario, the provincial government pays for drugs administered in hospitals and nursing homes, and additionally, through the Ontario Drug Benefit Plan, for prescription drugs for 1.5 million seniors and social assistance recipients.

Under its terms of reference, the Inquiry was given the authority to hold public hearings and to commission research into aspects of drug prescription and utilization. This monograph reports the results of a representative sample survey of Ontario physicians commissioned by the Inquiry to document physicians' experiences with prescription drugs and their attitudes toward issues and policies related to drug prescribing. This initial Chapter provides an overview of the research and a general guide to the analysis which follows.

Chapter Two provides details of the survey of Ontario physicians conducted for the Inquiry. It acknowledges the substantial input to the research design of the College of Physicians and Surgeons of Ontario, the Ontario Medical Association and the staff of the Inquiry. The chapter discusses the methodologies employed in drawing the sample of physicians, conducting the survey, and checking the representativeness of the survey results. An account of the fieldwork is provided along with details of the calculation of the response rate. A final section of the chapter maps out the data analysis.

Chapter Three describes the professional characteristics of physicians in the survey. In addition to establishing a general demographic profile of the respondents, the aim is to identify variables like age, specialization, location of training, practice type, method of professional remuneration and sex which may influence physicians' attitudes to prescribing and their prescribing decisions. One hypothesis in this respect is that older physicians may have more difficulty than recent medical school graduates in "keeping up" their professional knowledge about prescription drugs, leading to different prescribing patterns. Research also suggests that women physicians may have different attitudes toward medicine than their male colleagues and conduct their practices in different ways as a result. Further, we are interested in identifying variables like prescription volume which should be taken into account when interpreting the survey results. Compared to physicians who write large numbers of prescriptions, physicians who write few may have significantly different assessments of the adequacy of their professional training, relevant information sources, and issues relating to prescription drugs.

The fourth Chapter addresses physicians' experiences with respect to prescribing and prescription drugs. Of key interest are physicians' estimates of the numbers of prescriptions written for their patients, the extent of consultations conducted with patients for whom prescriptions are written, and the importance of certain non-clinical factors which may influence their prescribing decisions. Chapter 4 presents data measuring the frequency with which individual physicians attend relevant courses and seminars organized by professional groups and government, compared to the frequency of their contacts with pharmaceutical companies through sales personnel, seminars and industry-sponsored drug trials. The extent of benefits received by physicians from corporate sources is also documented. In brief, the results suggest that a significant proportion of prescriptions written by Ontario physicians are not accompanied by consultations with patients; that while physicians attend profession-sponsored courses, seminars and drug trials which may provide information about prescription drugs generally, they have almost no contact with pharmacists about the specific prescriptions they write; and that Ontario physicians have extensive contacts with the pharmaceutical industry through company representatives, corporate-sponsored events and various benefits.

Chapter 5 focuses on the sources and perceived adequacy of physicians' information about prescribing and prescription drugs. This addresses two of the central findings of the Goldberg report (Carruthers, Goldberg et.al., 1987) which suggest that there may be deficiencies in medical education and in the information available to physicians about drug properties, indications and costs. Key survey findings are that a quarter of Ontario physicians are not satisfied with their training in this area and that less than a fifth are satisfied with their specific knowledge of drug costs.

Physicians' assessments of a range of factors which may influence the prescription and utilization of drugs are presented in Chapter 6. Central to the analysis are physicians' own views of non-clinical factors which have produced a trend toward progressively higher prescription drug costs in Ontario and which may influence their own prescribing decisions. Of special interest are the findings that less than half of the physicians surveyed explicitly agree that the dollars spent on prescription drugs in Ontario have had a positive influence on health status while more than half believe that physicians place too much emphasis on prescription drugs when treating their patients. Small minorities of physicians indicate that their prescribing decisions are influenced by pressures from patients but majorities suggest that economic factors have an important influence in this respect.

The final chapter of data analysis documents physicians' support for a range of policy strategies to monitor and potentially improve drug prescribing. Addressed in Chapter 7 are strategies for pharmacists, such as requiring printed information on appropriate use and side-effects to be provided with each prescription; strategies for drug manufacturers, such as licensing of new drugs only if they demonstrate significant improvements over available drugs; as well as strategies for physicians and patients including the introduction of a professional review system to monitor prescribing patterns and introduction of a computerised "smart card" to monitor use.

Chapter 8 summarizes the survey results and points to a number of conclusions following from them. In brief, the results suggest that while there is no evidence from the survey of a crisis in the way drugs are prescribed in Ontario, there are a number of important questions which should be addressed. These questions concern the levels of information

physicians have about prescription drugs, the ways in which such information is derived, and non-clinical influences on prescribing behaviour. The survey results also suggest that while generally resisting third party regulation of medical practice, majorities of physicians support a range of policy strategies to monitor and improve prescribing. Such strategies include the expansion of continuing medical education programs, the introduction of a computerized "smart card," regulations requiring information about costs and side-effects to be included in all prescription drug advertisements, and the establishment of programs of peer review.

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CHAPTER 2

DATA AND METHODOLOGY

The survey of Ontario physicians commissioned by the Inquiry was conducted by the authors between April and July 1989 using the survey research facility of the Institute for Social Research, York University. An eight page, self-administered questionnaire was mailed to 1,700 physicians selected randomly from a computerized list provided by the College of Physicians and Surgeons of Ontario. Just over 1270 of these physicians were found to be eligible for the survey and completions were received from 842 for an effective response rate of 66.3 percent. This chapter provides details of the survey methodology and the analytic strategy used to examine and report the survey results.

2.1. Questionnaire

The questionnaire for the physicians survey was designed in close consultation with the Inquiry, the College of Physicians and Surgeons of Ontario, and the Ontario Medical Association. Successive drafts of the questionnaire and other survey documents were reviewed by representatives of these organizations who advised both on general content and on the specific wording of questionnaire items. Before going to the field, the questionnaire was pretested with physicians representing a range of clinical experiences, and further revisions were made as a result.

The majority of questionnaire items are in Likert-type format, close-ended questions with scale responses. The advantages of this format include ease of response, the relatively low costs of coding and data entry, and the capacity to directly compare responses to related questions. To ensure that physicians had the opportunity to express views not explicitly addressed by close-ended survey items, batteries of these items were followed in the questionnaire by open-ended options to provide "other" responses or opinions. As well, the final page of the questionnaire was designed so that physicians had sufficient space for

further comments they might wish to make. Examples of the questionnaire and accompanying documents are found in Appendix A.

2.2. Sample

The initial research design called for a 1/16 or 6 percent sampling of the more than 18,000 practising physicians in Ontario, to yield a sample N of about 1,100 physicians. Selections were to be made at random from the membership list of the College of Physicians and Surgeons of Ontario. It was estimated that about ten percent of physicians on the list would not be eligible for the survey because they would have no clinical practice, had died, retired, or moved out of province, or because their listed addresses would not be correct and could not be traced. Assuming a reasonable response rate, and no significant response bias, this strategy should have produced a representative sampling of Ontario physicians in numbers sufficient to generate stable estimates of population characteristics.

However, because the Inquiry was also interested in possible differences in the practice patterns and attitudes of sub-groups within the profession, particularly men and women, and younger and older physicians, the total sample size was increased to insure sufficient statistical power to conduct between-group comparisons. This reflected the fact that only 17 percent of Ontario physicians are women, and that physicians under 35 constitute just over 20 percent of the physician population (Physician Manpower Data Centre, 1987). Smaller random samples might, therefore, yield too few women and younger physicians for the purposes of comparison. The alternative strategy of stratifying the sample, in effect, oversampling groups like women and younger physicians to ensure sufficient numbers for the purposes of analysis, turned out not to be possible because appropriate identifying information was not available on the computerized list from which the sample was drawn. The final sample therefore consisted of 1,700 physicians selected randomly from the records of the College of Physicians and Surgeons of Ontario.

2.3. Data Collection

The survey design called for an initial mail contact with each physician, followed-up, where appropriate, by a series of additional mail contacts and finally, by a personal telephone call. Data collection thus followed the general lines set out by Dillman in his ground-breaking work on the conduct of mail surveys (1978). Recent surveys of Canadian physicians carried out using this approach have reported response rates approaching 70 percent (Northrup, 1988). Each physician could receive up to four mail contacts requesting participation in the survey. The first and third of these consisted of covering letters from the Inquiry and the investigators; a questionnaire; and a prepaid, self-addressed return envelope. The second and fourth mail contacts were reminder cards stressing the importance of the research, asking physicians for their cooperation and providing them with a name and number to call if they had questions about the content or aims of the research.

The first wave of questionnaires was sent out beginning on April 7, 1989. This was followed ten days later by the first of the reminder cards. On May 5, second questionnaires were mailed to all physicians who had not yet responded, followed, again about ten days later, by reminder cards. By June 1, 725 completed questionnaires had been returned. In addition, returns indicated that a significant number of physicians in the sample were deceased, no longer practising medicine, not in clinical practice, or out of the province, making them ineligible for the survey.

Beginning on June 5, systematic efforts were made to contact each of the remaining 805 non-responding physicians by telephone. In 279 cases, no Ontario telephone listings could be found using household and business telephone directories, directory assistance, and the Canadian Medical Directory. After repeated attempts, interviewers personally contacted 255 of the 526 physicians for whom telephone numbers were found. Of the physicians personally contacted, 68 or 26.6 percent indicated that they were not eligible for the survey because they were retired, no longer practised medicine, or had no clinical practice of any kind.

A total of 842 completed questionnaires were received by the cut-off date of July 24. After removing from the sample all ineligible physicians, and those for whom telephone

listings could not be found, this number corresponds to an effective response rate of 66.3 percent comparing favourably to other surveys of physicians reported in the literature (Shosteck and Fairweather, 1979). There are a variety of ways of computing response rates (Dillman, 1978; Frey, 1983; Wiseman and McDonald, 1979). The one used here is relatively conservative and widely accepted in the research community (Northrup, 1988). A higher response rate could have been estimated by assuming, on the basis of the telephone results, that more than 25 percent of the physicians on the original list were not, in fact, eligible to be surveyed.

2.4. Representativeness

Although a random sample of the type and size described above should closely approximate the characteristics of the population of Ontario physicians as a whole, it is possible that physicians responding to the survey could have different characteristics than non-responders thus introducing bias into the survey results (Fitzgerald and Fuller, 1982). While the possibility of significant bias tends to decrease as response rates increase, a number of checks were conducted prior to analysis of the data.

First, the demographic characteristics of physicians in the survey are similar to those of the general population. For instance, 487 or 58 percent of the physicians in the survey were trained in Ontario, compared to the figure of 56 percent estimated by the Ontario Physician Manpower Data Centre in 1988. Just under 20 percent of responding physicians are under age 35 compared to the estimated 21 percent of Ontario physicians in that same age category. Minor differences are observed with respect to women and general practitioners who make up 22 percent and 52 percent of the respondents respectively, but only 17 percent and 48 percent of the physician population of Ontario. This suggests that women, who are more likely than men to be general practitioners, were slightly more likely than their male, specialist colleagues to respond to the survey. However, this difference is not marked.

Second, systematic efforts were made during the telephone call-backs to determine why physicians had not returned questionnaires. It was possible, for instance, that non-respondents objected to some aspect of the research or to the mandate of the Inquiry.

In telephone calls to the investigators during the early stages of the fieldwork, several physicians expressed the concern that the inquiry would serve to stimulate further, and in their view, unnecessary government regulation of the medical profession. However, when probed during the telephone call-backs, the majority of non-responding physicians indicated that lack of time was the primary reason why they had not completed questionnaires.

Third, it is possible that physicians who responded more quickly to the survey had different attitudes than those who responded less quickly or failed to respond at all. This possibility was examined by comparing the responses on a number of key issues of physicians who returned questionnaires during each of the four months of the fieldwork. No significant differences were found.

The results of the checks just described suggest, therefore, that the survey results can be taken with some confidence to represent the characteristics and attitudes of the population of Ontario physicians as a whole.

2.5. Analytic Strategy

Because the attitudes and experiences of Ontario physicians as a whole are of central interest in this research, the tables in the main body of the text report the marginal response distributions of all the physicians in the survey to each individual questionnaire item. (Exact item wordings may be found in the survey documents in Appendix A.) To facilitate presentation, the original response scales of many of the survey items have been collapsed so that, for instance, the percentages of physicians approving and strongly approving of specific policy strategies have been combined into a broad approval category, and those disapproving and strongly disapproving into a broad disapproval category. However, complete frequency distributions for each survey item with its original response scale are included in Appendix B.

Crosstabulations of physicians' survey responses by selected professional characteristics are found in Appendix C. For example, physicians who write few prescriptions will have qualitatively different experiences with prescription drugs than physicians who order them in larger volume. Such differences may be associated with differences in the ways in

which physicians perceive and respond to questions about prescription drugs including the adequacy of their training and knowledge in this area, factors motivating prescribing behaviour, and policy strategies to improve patterns of drug prescription and utilization. To control for this possibility, responses have been crosstabulated by prescription volume; the results are presented in Appendix C and reported at appropriate points in the text.

Additionally, physicians' attitudes and experiences may be influenced by differences in their professional characteristics. For example, because of their more recent medical training, younger physicians may be more satisfied with their knowledge about prescription drugs than their older colleagues, and because of substantive differences in their education and professional experiences, favour different policy strategies (Taylor et. al., 1984). Further, recent research suggests that women physicians may have different orientations than males toward medicine which may be reflected in their professional behaviours including, presumably, those related to prescribing (Burkett and Kurz, 1981; Williams et. al., 1990). To assess the extent of the possible associations between professional characteristics and physicians' attitudes toward and experiences with prescription drugs, the survey responses have been crosstabulated with age, gender, specialty, location of training, payment method and practice type. Once again, the results are presented in tabular form in Appendix C and reported throughout the text.

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CHAPTER 3

PROFESSIONAL CHARACTERISTICS

This chapter describes the professional characteristics of the physicians surveyed. Included in the chapter are measures of age, gender, medical specialization, location of undergraduate training, method of professional remuneration, mode of practice organization and prescription volume. The literature suggests that such variables may be associated with differences in prescribing patterns and in the quality of prescribing decisions (Carruthers, 1987; McGavock, 1988; Rabin, 1974; Schwartz, Soumerai and Avorn, 1989). The aim therefore is both to profile physicians in terms of their professional backgrounds and practices and to identify differences which may be associated with variations in attitudes and experiences regarding prescription drugs. Since many of these characteristics will be intercorrelated, the data in this chapter are presented in the form of cross-tabulations.

3.1. Professional and Background Characteristics

Table 3.1 describes the age, gender, specialty and location of undergraduate training of physicians in the survey. The data in the right-most column of the table indicate that 19.7 percent of the physicians are younger than 35, while an additional 19.1 percent are between 35 and 40; 27.3 percent are 40 to 49; 17.7 percent are 50 to 59; and 16.2 percent are 60 years of age or older. Just under 22 percent of the physicians are women. Reading from left to right along the bottom row of the table, the figures show that 52.3 percent of the physicians surveyed are General Practitioners; 11 percent are in surgical specialties; 22.4 percent are in medicine; and an additional 14.3 percent are in "other" specialties including "emergency medicine," radiology, and pathology. Approximately 58 percent of the sample received their undergraduate medical training in Ontario compared to 14.5 percent who were trained elsewhere in Canada; 12.5 percent trained in the United Kingdom; and 14.8 percent in other countries including the United States. These estimates are substantially similar to those published by the Ontario Physician Manpower Data Centre (1987) and to the Ontario

results of a national physician survey conducted in late 1986 (Stevenson, Williams and Vayda, 1988).

The relationships between age, gender, specialty and location of undergraduate medical training are also measured in Table 3.1. The statistically significant Cramer's V of .14 <1> reflects the fact that younger physicians tend more than their older colleagues toward General Practice. Looking at the percentages, the proportion of GPs declines monotonically from the youngest age group to the oldest: 68.5 percent of physicians under 35, but only 38.3 percent of those 60 or older, are general practitioners; conversely, 20.3 percent of the physicians in the most senior age category are in surgery compared to 3.1 percent of physicians under 35.

Age and location of training are also significantly correlated, with physicians in the youngest cohort most likely to have been Canadian trained. Compared to the two thirds of physicians 60 or over, 91 percent of those under 35 were trained in Ontario or other parts of Canada. There is, correspondingly, an increase with age in the proportion of physicians trained in the United Kingdom and other countries: more than a third of physician over 40 were trained outside of Canada.

Confirming a trend reported in other Canadian studies, (Contandriopoulos and Fournier, 1987; Ryten, 1987; Taylor, Stevenson and Williams, 1984) our survey data show that women are significantly more likely than men to enter General Practice, and that women correspondingly tend to be underrepresented in surgery and surgical subspecialties. Approximately 62 percent of women compared to 49.4 percent of men are general practitioners while 4.4 percent of women but 13 percent of men are surgeons. Location of training and gender are not related.

Method of physician remuneration is described in Table 3.2. The figures in the bottom row of the table shows that 73.9 percent of physicians in Ontario derive at least two-thirds of their professional incomes from fee-for-service. In comparison, 19 percent of physicians derive less than a third of their incomes in the same way, relying instead on salary and capitation. Just over 7 percent of the survey respondents derive substantial proportions of their income through a mix of fee-for-service, salary and capitation.

Also shown in Table 3.2 is the distribution of physicians in different practice settings. The variable "practice type" combines responses to multiple questionnaire items which ask physicians about their time in practice spent in institutional and non-institutional settings, and about arrangements they may have with other physicians for sharing incomes, expenses, and patient records (Williams, Vayda et. al., 1990). The characteristics of physicians in these six practice types can be summarized as follows:

Solo practice physicians spend two-thirds or more of their time outside of hospitals and other medical institutions, are not involved in partnerships or business arrangements with other physicians, and do not share patient records.
Group practice physicians work primarily outside of institutional settings, have partnerships or business arrangements with their colleagues, and utilize common patient records.

Partnerships involve physicians who also work primarily outside of hospitals and institutional settings, who have economic associations with other physicians, but who do not share common patient records as in group practice.

Hospital physicians spend at least two-thirds of their time on hospital or academic staff.

CHC/HSO staff physicians spend a minimum of two-thirds of their time working in Community Health Centres and Health Service Organizations.

Mixed practice includes physicians who spend substantial proportions of their time in both solo and group practice, in both private practice and institutional settings.

The figures in the bottom row of Table 3.2 indicate that 24.8 percent of physicians in the survey can thus be classified as solo practitioners; 14 percent are in private group practices based outside of hospitals; 4.5 percent are in non-hospital partnerships; 28.3 percent are on hospital staff; and 2.9 percent are CHC/HSO staff physicians. Additionally, just over a fifth (22 percent) of physicians spend substantial proportions of their time in more than one of these practice settings.

Age is significantly related to both payment method and practice type. Younger physicians tend to be less dependent upon fee-for-service than their older colleagues. For example, of those under 35 years of age, 54.6 percent derive two-thirds or more of their income from fee-for-service payments; for the three oldest age cohorts combined, the

corresponding estimate exceeds 75 percent. With respect to practice type, older physicians are more likely than younger ones to be in solo practice. Almost half (48.1 percent) of those 60 or older, but only 14.2 percent of those 35 or younger, are solo practitioners. Conversely, 36.4 percent of the youngest physicians but only 20.3 percent of the oldest ones work primarily in hospitals. Younger physicians are also overrepresented in CHCs and HSOs.

Payment method, but not practice type, varies significantly by gender. Women physicians are less likely than men to derive substantial proportions of their professional income from fee-for-service payments. However, women and men in similar proportions are solo practitioners, in group practice, and so on.

3.2. Prescribing Volume and Density

Of central concern to the research are physicians' prescribing patterns. One gross indicator of such patterns is prescription volume, the number of prescriptions ordered during a set period. Recent studies suggest that prescribing quality and prescription volume are correlated, although there is debate over the nature and strength of the relationship (McGavock, 1988; Schwartz, Soumerai and Avorn, 1989).

In the survey, physicians were asked to estimate on average, how many prescriptions, including renewals, they write during a typical week in practice. Since prescription volume is likely to be related to specialty, and patient volume, as well as other professional characteristics, the results in this section are crosstabulated with age, gender, specialization and so on. Further, a "prescription density" estimate measuring the ratio between number of prescriptions ordered and number of patient-visits conducted in a week, is also presented in the tables. The advantage of this ratio is that it adjusts for differences in patient volume and is thus a measure of the relative frequency with which physicians write prescriptions for individual patients. The disadvantage is that similar ratio estimates may be computed for physicians who have little clinical practice and few patients, and for physicians in full-time clinical practice who conduct large numbers of patient-visits and prescribe in volume even if at a similar per patient rate. While physicians in the former category are unlikely to have a substantial direct impact on overall drug costs and rates of utilization, physicians in the latter category will have a more substantial impact simply because of sheer volume. From a policy

standpoint, therefore, it is important to consider the characteristics of different volume prescribers.

The figures in the bottom row of Table 3.3 indicate that, on average, Ontario physicians write 54 prescriptions for their patients during typical weeks in practice. During the same periods physicians as a group estimate that they conduct an average of 96 patient-visits. The corresponding mean prescription density estimate is thus .52, indicating that about one patient-visit in two results in a prescription. Note however, that there is extensive variation in the number of prescriptions written by individual practitioners: about a fifth (20.7 percent) of Ontario physicians write virtually no prescriptions during typical weeks while another fifth (21.1 percent) write more than 70 prescriptions per week.

As suggested above, prescribing patterns are likely to vary as a function of a range of factors. For instance, the data in Table 3.3 show that younger physicians tend to write significantly fewer prescriptions than their older colleagues. For instance, physicians under 35 report an average of 41.8 prescriptions per week compared to a weekly average of 61.5 prescriptions for physicians over 59. Furthermore, the mean prescription density estimates are significantly higher for older physicians: the estimate for physicians in the youngest age cohort is .47 compared to .65 for physicians in the oldest cohort. Thus, about one in two patient-visits conducted by younger physicians will be accompanied by prescriptions compared to two in three such visits for physicians in the senior age cohort. Differences in prescription volume are therefore not simply a function of differences in patient volume.

Prescribing frequency is also related to gender. While male physicians average 58.6 prescriptions per week, women average 38.4, a significant difference. When prescription volume is taken into account, this difference is reduced but remains statistically significant: the prescription density estimate for men is .54 and for women, .46.

Table 3.4 reveals a strong relationship between medical specialty and prescribing. The figures in the table indicate that general practitioners write an average of 75.1 prescriptions in a typical week while surgeons write 32, medicine specialists 27.1, and physicians in other specialties, 34.8. The higher prescription volume of GPs is only partially

accounted for by the fact that they see greater numbers of patients: the prescription density estimate for GPs is .60 compared to estimates of .37, .45, and .45 for physicians in surgery, medicine and other specialties respectively. There are no systematic differences in prescription volume or density related to location of medical training.

Method of payment and mode of practice organization are significantly related to prescription volume but not to prescription density. Table 3.5 indicates that physicians who derive more than two thirds of their professional income through fee-for-service also write the most prescriptions. Fee-dependent physicians average 62 prescriptions per week, compared to an average of 25 prescriptions for those who are primarily salaried. However, this difference is largely explained by the fact that fee-for-service physicians see substantially larger numbers of patients during typical weeks, 108 as compared to 53 for physicians in salaried positions. The prescription density estimates suggest that although they see almost twice as many patients during similar periods, fee-for-service physicians and those paid in other ways prescribe at about the same rate. A similar pattern emerges for practice type, so that physicians in private groups see significantly more patients per week than those in other practice settings, but prescribe at proportionately similar rates.

Summary and Discussion

The patterns of findings in this chapter can be summarized as follows: First, younger physicians are less likely to work in solo practice than their older colleagues and they are more likely to be paid through salaried and capitated alternatives to fee-for-service. Younger physicians tend to see fewer patients during typical weeks, to prescribe fewer drugs, and to prescribe fewer drugs per patient-visit. A similar pattern is observed for women, who because of their relatively late influx into medicine, tend to be younger than their male colleagues.

Second, there are significant differences in the prescribing patterns of general practitioners and specialists. GPs conduct many more patient-visits in typical weeks than specialists, prescribe drugs in greater volume, and prescribe more drugs per patient. While

constituting roughly half of the Ontario physician population, general practitioners thus account for about three quarters of the prescriptions written.

Third, method of payment and practice type are strongly related to patient volume and prescription volume, but are not associated with prescription density, the relative rate at which drugs are prescribed. For instance, fee-for-service physicians report that they conduct, on average, double the number of patient-visits per week as their colleagues remunerated through other methods although prescription density estimates are similar. Physicians in group practice also report heavier patient loads than physicians in other practice settings but not higher prescribing rates. So while payment method and practice type do not appear to influence whether or not individual patients are prescribed drugs, they are significantly related to patient volume, to volume of prescriptions, and thus, to overall rates of prescription drug utilization.

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Notes

<1> Throughout this report, various measures of association are used to summarize the strength of the relationship between two given variables. Cramer's V is a statistic based on chi-square which is most appropriately used with nominal-level variables. It ranges from zero to one, with a large value indicating a strong relationship. Tau B and Tau C are ordinal-level measures which range from -1 to +1. Their interpretation is similar to that for Cramer's V: the larger the value of the statistics, the stronger the association between the variables. The sign of the Tau coefficients indicates the direction of the relationship. The eta coefficient assumes that the dependent variable is at least interval level and that the independent variable is nominal level, and ranges from a low of zero to a high of one. We report eta coefficients computed from one-way analyses of variance. When all categoric means in an analysis of variance are equal, eta's value is zero, indicating that there is no relationship between the variables.

TABLE 3.1 AGE AND GENDER BY SPECIALTY AND LOCATION OF TRAINING

	Specialty[a]				Location of Training[a]					
	GP	Surgery	Medicine	Other Specialty	Rest of Ontario	Canada	UK	Other	Number of Physicians	Percent of Physicians
Age										
< 35	68.5%	3.1	16.7	11.7	70.4%	20.4	2.5	6.8	162	19.7%
35 - 39	52.2%	10.8	19.1	17.8	66.2%	17.8	5.7	10.2	157	19.1%
40 - 49	52.0%	10.7	24.9	12.4	54.5%	9.8	17.3	18.3	225	27.3%
50 - 59	45.2%	13.7	30.8	10.3	50.7%	8.9	19.9	20.5	146	17.7%
> 59	38.3%	20.3	23.3	18.0	52.3%	14.4	17.4	15.9	133	16.2%
Cramer's V=		.14**				.16**				
Gender										
Female	62.1%	4.4	21.4	12.1	61.3%	12.2	9.4	17.1	182	21.8%
Male	49.4%	13.0	22.6	15.0	57.5%	15.0	13.3	14.1	654	78.2%
Cramer's V=		.13**				.07				
Number of Physicians	440	93	189	120	487	121	105	124	842[b]	
Percent of Physicians	52.3%	11.0	22.4	14.3	58.2%	14.5	12.5	14.8	100%	

[a] Cell entries are row or horizontal percents.

[b] The total N may not add to 842 for every variable because of missing cases due to non-response.

** $p \leq .01$.

TABLE 3.2 AGE AND GENDER BY PERCENT FEE-FOR-SERVICE AND PRACTICE TYPE

	% Income from Fee-for-Service*			Practice Type*							
	0 - 33%	34 - 65%	66 - 100%	Solo	Group	Partner.	Hospital	CHC/HSO	Mixed	Number of Phys.	Percent of Phys.
Age											
< 35	40.1%	5.3%	54.6%	14.2%	16.0	1.2	36.4	6.8	25.3	162	19.7%
35 - 39	17.0%	9.9%	73.0%	22.9%	17.2	6.4	35.0	2.5	15.9	157	19.1%
40 - 49	8.6%	6.2%	85.2%	33.3%	15.1	6.2	22.7	1.3	21.3	225	27.3%
50 - 59	12.5%	8.8%	78.7%	25.3%	12.3	3.4	28.8	2.1	28.1	146	17.7%
> 59	17.6	5.9%	76.5%	48.1%	9.0	2.3	20.3	1.5	18.8	133	16.2%
Tau C (Cramer's V) =		.13**				(.15**)					
Gender											
Female	26.9%	7.8%	65.3%	32.4%	15.9	4.9	20.9	4.9	20.9	182	21.8%
Male	16.7%	7.0%	76.3%	27.4%	13.3	4.4	30.6	4.4	30.6	654	78.2%
Cramer's V =		.11**				.11					
Number of Physicians	146	55	570	239	118	38	238	24	185	842	
Percent of Physicians	18.9%	7.1%	73.9%	24.8%	14.0	4.5	28.3	2.9	22.0	100%	

* Cell entries are row percents.

** $p \leq .01$.

TABLE 3.3 AGE AND GENDER BY PRESCRIBING FREQUENCY

	Number of Prescriptions Per Week[a]								
	0 - 1	2 - 15	16 - 30	31 - 70	> 70	Mean # of Prescr. Per Week	Mean # of Patient Visits	Mean Prescr. Density[b]	Number of Physicians
Age									
< 35	19.1%	19.1	24.7	21.6	15.4	41.8	89.8	.47	162
35 - 39	20.4%	17.2	21.7	22.9	17.8	46.4	94.9	.47	157
40 - 49	17.8%	21.8	16.4	18.7	25.3	62.7	102.4	.53	225
50 - 59	16.4%	19.9	16.4	21.9	25.3	57.7	105.2	.52	146
> 59	29.3%	23.3	18.8	7.5	21.1	61.5	83.1	.65	133
Tau B (Eta) =			-.02			(.12*)	(.12*)	(.13*)	
Gender									
Female	25.3%	22.5	22.5	14.3	15.8	38.4	73.2	.46	182
Male	19.4%	19.4	18.0	20.3	22.8	58.6	102.4	.54	654
Cramer's V (Eta) =			.11*			(.12**)	(.19**)	(.07*)	
All Physicians	20.7%	20.0	19.1	19.1	21.1	54.2	96.0	.52	842

[a] Cell entries are row percents.

[b] Prescription Density = Number of Prescriptions Per Week/Number of Patient-Visits Per Week.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE 3.4 SPECIALTY AND LOCATION OF TRAINING BY PRESCRIBING FREQUENCY

	Number of Prescriptions Per Week*								
	0 - 1	2 - 15	16 - 30	31 - 70	> 70	Mean # of Prescr. Per Week	Mean # of Patient Visits	Mean Prescr. Density	Number of Physicians
Specialty									
GP	15.2%	12.5	15.0	25.0	32.3	75.1	117.1	.60	440
Surgery	8.6%	26.9	37.6	17.2	9.7	32.0	95.1	.37	93
Medicine	16.4%	37.6	24.3	12.2	9.5	27.1	59.8	.45	189
Other Specialty	56.7%	14.2	11.7	10.0	7.5	34.8	71.2	.45	120
Cramer's V (Eta) =			.30**			(.31**)	(.39**)	(.20**)	
Location									
Ontario	18.3%	20.9	18.7	20.5	21.6	55.5	99.7	.51	487
Rest of Canada	22.3%	18.2	19.0	24.0	16.5	53.4	88.7	.54	121
U.K.	21.0%	15.2	19.0	17.1	27.6	60.2	102.0	.53	105
Other Specialty	28.2%	21.8	21.0	10.5	18.5	43.5	81.8	.56	124
Cramer's V (Eta) =			.08			(.06)	(.11*)	(.04)	
All Physicians	20.7%	20.0	19.1	19.1	21.1	54.2	96.0	.52	842

* Cell entries are row percents.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE 3.5 PERCENT FEE-FOR-SERVICE AND PRACTICE TYPE BY PRESCRIBING FREQUENCY

	Number of Prescriptions Per Week*								
	0 - 1	2 - 15	16 - 30	31 - 70	> 70	Mean # of Prescr. Per Week	Mean # of Patient Visits	Mean Prescr. Density	Number of Physicians
% Income from Fee-for-Service									
0 - 33%	39.0%	27.4	17.1	10.3	6.2	25.3	52.5	.49	146
34 - 65%	5.5%	41.8	34.5	10.9	7.3	28.4	58.6	.52	55
66 - 100%	10.0%	18.2	19.8	24.0	27.9	62.0	107.6	.53	570
Tau C (Eta) =			.27**			(.21**)	(.34**)	(.03)	
Practice Type									
Solo	29.3%	15.9	14.6	16.7	23.4	55.4	103.5	.50	239
Group	0.8%	6.8	18.6	31.4	42.4	84.1	132.1	.61	118
Partnership	44.7%	7.9	15.8	13.2	18.4	82.7	127.1	.60	38
Hospital	24.4%	34.0	22.7	13.0	5.9	24.6	56.8	.46	238
CHS/HSO	0.0%	16.7	37.5	25.0	20.8	42.7	96.1	.43	24
Mixed	15.1%	18.4	18.9	22.7	24.9	66.0	106.2	.55	185
Cramer's V (Eta) =			.22**			(.30**)	(.42**)	(.12)	
All Physicians	20.7%	20.0	19.1	19.1	21.1	54.2	96.0	.52	842

* Cell entries are row percents

** $p \leq .01$.

CHAPTER 4

PROFESSIONAL EXPERIENCES

In the previous chapter we identified differences in the prescribing patterns of Ontario physicians related to their practice characteristics. This chapter focuses on physicians' experiences in practice associated with those patterns. The analysis examines practitioners' estimates of the cost-effectiveness of the drugs they are most familiar with in their own practices; the frequency with which they counsel their patients about drug therapies; patterns of participation in seminars, courses and trials about prescription drugs sponsored by professional groups, government and the pharmaceutical companies; and types of benefits received by physicians from these companies. In this chapter, the analysis focuses on the marginal response distributions to the survey items of all the physicians in the survey. However, cross-tabulations of these responses by prescription volume, age, sex, specialty, payment method and practice type are presented in Appendix C and discussed at appropriate points in the text.

4.1. Experiences in Practice

Physicians were asked to estimate the proportion of drugs most familiar to them which in their opinion failed to produce results "commensurate with their costs." This question directly addresses physicians' own assessments of the relative cost-effectiveness of the drug therapies about which they have direct professional knowledge. The top figure in the left-most column of Table 4.1 reveals that Ontario physicians believe that more than 25 percent of the drugs most familiar to them are not, in these terms, cost-effective. The associated minimum and maximum estimates of 0 and 100 and the standard deviation of 20.8 reveal that there is substantial variation in these estimates. There is similar variation in the likelihood that physicians will prescribe generic drugs: while physicians say that just over half (51.5 percent) of the prescriptions they write are for generics, some physicians apparently order no generics while others order them virtually exclusively.

The frequency and nature of physician-patient interactions concerning prescription drugs was also addressed in the questionnaire. Physicians were asked, "during a typical week on how many separate occasions would each of the following occur in your professional practice":

1. "you review and discuss with a patient the drugs he or she is taking";
2. "you counsel a patient to reduce the number of drugs taken or not to take a particular drug";
3. "a patient asks you to prescribe a particular drug without having fully discussed their complaint or problem"; and
4. "you end a visit with a prescription even though it may not be strictly medically necessary".

Discussions with patients are the most frequently reported event, occurring, on average, 25 times during a typical week. By contrast, the other types of events specified are relatively infrequent: physicians suggest reductions in drug utilization about 6 times weekly; they receive less than 3 requests per week from patients for drugs without having fully discussed the patient's problem; and they order about 3 prescriptions during the same period which are not strictly medically necessary.

The relative frequency of these events is significantly related to prescription volume. Table C4.1 shows that physicians writing between 2 and 15 prescriptions per week report an average of 10.7 discussions with patients about the drugs they are taking, while physicians writing over 70 prescriptions report 45 such discussions. Suggested reductions also increase with increased prescription volume: physicians in the 2-15 prescription category say that they make 2.5 recommendations of this type each week; the corresponding estimate for the highest volume prescribers is 11.2. A similar pattern is observed for patient requests and unnecessary prescriptions.

However, while the absolute number of these events is correlated with prescription volume, itself a correlate of patient-visits, the relative frequencies of discussions and

recommendations for reductions, when adjusted for differences in prescription volume, are not. As noted above, physicians as a group estimate that they discuss prescription drugs with their patients on average about 25 times per week while writing approximately 54 prescriptions. This produces an overall density estimate of .49; 49 times out of a 100, Ontario physicians will discuss and review prescription drug use with their patients. But the density estimate for high volume prescribers is .35 indicating that these physicians discuss and review drug use with their patients significantly less frequently than the overall average suggests. By comparison, the corresponding density estimate for physicians in the next highest prescription volume category, those writing between 31 and 70 prescriptions per week, is .54. The same observation is made with respect to suggested reductions: compared to an adjusted rate of .20 for physicians as a group, the rate for high volume prescribers is .09. Patients of high volume prescribers therefore appear to be less likely to have their drug utilization patterns reviewed as part of the prescribing process.

4.2. Professional Education and Review

Physicians may derive information about prescription drugs and their own prescribing patterns in a variety of ways. For instance, as discussed in Chapter 5, they may read journals, have discussions with their physician colleagues or communicate with pharmacists. They may also derive pertinent information in more formal-institutional ways, through involvement in continuing medical education courses, clinical drug trials, or by way of having their practices reviewed.

The survey asked on how many separate occasions during the past two years physicians had "attended seminars or conferences on prescription drugs sponsored by physicians' groups", "attended a Continuing Medical Education (CME) course on prescription drugs", had their "prescribing practices reviewed by the College or government", "participated in a hospital-based clinical drug trial", or had "been called by a pharmacist about drug profiles, contraindications adverse effects". The results are found in Table 4.2.

Physicians report that they attended, on average, 3 seminars sponsored by physicians' groups and 2 continuing medical education courses in the past two years.

During the same period they participated in one drug trial based in a hospital while almost no physicians had their prescribing practices reviewed by government or the provincial College. In relative terms, calls to physicians from pharmacists about prescriptions occur more frequently than the other events discussed in this section. Nevertheless, they are not a daily or even monthly occurrence for most physicians. Physicians report that they were contacted an average of only 4.2 times by pharmacists in two years suggesting that such calls are more the exception than the rule. The average score for all physicians on the "profession contacts index" which is the unweighted sum of the 5 profession-related activities described in the table is 9.8, so that over two years physicians as a group were involved in about 5 of these activities per year.

In large part reflecting greater numbers of seminars attended and calls received from pharmacists, physicians in the highest prescription volume category score above average on the profession contacts index (15.1 versus a mean of 9.8--see Table C4.2). General practitioners and males, who tend to be heavier prescribers than their specialist and women colleagues, also have above average scores on this index (11.2 and 10.5 respectively).

4.3. Contacts with Pharmaceutical Companies

Ontario physicians report frequent contacts with pharmaceutical companies through their sales representatives (detail men) and through company-sponsored seminars and drug trials. These contacts are significantly more frequent among high volume prescribers.

As a group, Ontario physicians estimate that they have "been visited by a pharmaceutical company representative" just over 50 times in the past two years or about once every two weeks. In addition, physicians estimate that they attended an average of 5 seminars or conferences sponsored by pharmaceutical companies. Physicians report that they were surveyed by pharmaceutical companies about their prescribing habits just over twice (2.5) in two years and that they participated in corporate-sponsored drug trials about once (.8).

The data in Table C4.3 show that the frequency of physician contacts with pharmaceutical companies increases significantly with prescription volume. For instance,

physicians writing more than 70 prescriptions per week report the highest frequency of contacts with "detail men," just over 94 such contacts in two years, roughly one contact per week. This number is about double the overall average of 51 contacts, and about six times greater than the 15 contacts reported by physicians who write the fewest prescriptions. High volume prescribers also report participating in about 8 company-sponsored seminars, compared to the average of 5; they are surveyed more often than other physicians and they are more likely than average to take part in company-sponsored drug trials. The "company contacts index" which sums physicians' scores on the four variables described above reflects this relationship: compared to an overall average score of 56.4 for all physicians in the survey, high volume prescribers score 99.7, which means that they average more than one such contact per week, mostly with pharmaceutical company representatives. General practitioners, physicians in private group practice, and those dependent upon fee-for-service remuneration also score significantly above average on the company contacts index (see Tables C4.6 and C4.7).

In the survey physicians were asked if they had received benefits from pharmaceutical companies in the last two years. The data in Table 4.4 show that 57 percent of the physicians surveyed accepted meals in this period; 47.7 percent accepted stationery supplies; 10.2 percent accepted conference fees; 7.1 percent travel expenses; 2.6 percent, computer hardware or software, and 1.7 percent, office services. Note that these responses do not indicate the total number of benefits received by physicians, only the range of benefits received. So while just more than half of the respondents report the acceptance of meals, the data do not show how many meals were accepted by individual physicians.

The data also indicate that the heaviest prescribers receive the most benefits from the pharmaceutical industry (see Table C4.4). Sixty-eight percent of physicians in the highest prescription volume category, but only 57 percent of physicians overall, accepted meals. Three times as many heavy prescribers (59.8 percent) as light prescribers (20.7 percent) accepted stationery. Physicians writing more than 70 prescriptions per week are also more likely to have accepted computer equipment (7.1 percent as compared to an overall average of 2.6 percent). Physician acceptance of travel expenses reverses the usual relationship; in this case, heavy prescribers are least likely to have accepted such benefits (1.8 percent)

while physicians writing between 2 and 15 prescriptions report the highest acceptance rate (12.7 percent). The index of benefits, which is the simple sum of the types of benefits received, reveals a significant tendency for benefits to increase with prescription volume. Group practice physicians, among the heaviest prescribers, with higher than average numbers of contacts with the pharmaceutical companies, also have higher scores on this index than physicians in other practice settings (Tables C4.6 and C4.7).

While some physicians permit pharmaceutical company representatives relatively open access to their offices, others restrict or prohibit such access. The survey asked: "In your practice are there any restrictions on visits by pharmaceutical company detail men?" Table 4.5 indicates that thirty-four percent of physicians had "no restrictions", 51 percent had "some restrictions", while the remaining 15 percent said they permitted no visits by detail men. The likelihood of restrictions is not related to prescription volume. However, data not shown in the tables indicate that older physicians in solo practice are among the most likely to have no restrictions on visits by pharmaceutical company representatives.

Summary and Discussion

A number of findings emerge from the analysis in this chapter.

First, physicians estimate that roughly a quarter of the drugs they are familiar with do not produce results commensurate with their costs. While the survey data are insufficient to determine whether physicians avoid such drugs because they are too expensive in relation to their effects, or whether physicians still prescribe such drugs for lack of alternatives, this finding suggests a potential problem in the pharmaceutical marketplace. Interestingly, physicians also estimate that about half of the prescriptions they write are for generic drugs, suggesting both a concern for costs, and the perception that generics, in many cases, can be substituted for brand name products.

Second, although demands from patients for prescription drugs and patients' expectations for a quick cure have been cited as important influences on physicians' prescribing decisions (Mahon and Godden, 1973; Schwartz, Soumerai and Avorn, 1989), physicians in the survey report relatively few requests from patients for drugs without proper consultation, and few prescriptions which are not medically necessary.

Third, physicians report that roughly once for each four prescriptions written they counsel reductions in drug use, and that about half the time they discuss prescription drug utilization with their patients. However, high volume prescribers report that they counsel reductions and review drug therapies less often than these average rates indicate. Thus, significant numbers of prescriptions written in Ontario would not appear to be accompanied by specific discussions or reviews of the patient's drug use. The literature suggests that such discussions play an important role in ensuring prescribing quality (Schwartz, Soumerai and Avorn, 1989: 577).

Fourth, large numbers of Ontario physicians report some involvement in profession-related events including seminars and continuing medical education courses which potentially provide them with relevant information about drugs and drug prescribing. The average Ontario physician attended 3 physician-sponsored seminars about prescription drugs in the two years before the survey. However, the frequency of government and professional reviews of prescribing practices is almost zero and there is little direct communication between prescribers and dispensers about the prescription drugs used by patients.

Fifth, compared to their involvement in profession-related events, physicians report more extensive contacts with the pharmaceutical industry, another important source of information about prescription drugs. For instance, while physicians are contacted by pharmacists about once every six months, they are visited on average once every two weeks by pharmaceutical company representatives. Similarly, the average number of physician-sponsored seminars attended in two years is 3; the average number of corporate-sponsored seminars attended is just over 5. And while high volume prescribers tend to be involved in more profession-related events than physicians prescribing fewer

drugs, they are also more likely to have contacts with the pharmaceutical companies, and these latter contacts are substantially more numerous. On average, physicians who write more than 70 prescriptions per week are visited by detail men once each week. Since information transmitted to physicians during the course of such contacts is likely to be more informational than educational, designed to promote the sale and utilization of specific pharmaceutical brands, this pattern of results raises questions about the objectivity and accuracy of information physicians have about prescription drugs (Carruthers, Goldberg, et. al., 1987: 178; Lexchin, 1988; Thompson, 1988).

Sixth, the apparently greater attractiveness of industry, as opposed to profession contacts, may be in part a function of the range of benefits offered to physicians by the industry. Significant numbers of Ontario physicians report that they accepted benefits from pharmaceutical companies in the two years before the survey. Among the most frequently reported benefits are meals and stationery; travel expenses and office services are least frequent. Just under 3 percent say that they received computer hardware or software from the industry. It is important to note that in January 1989, in the period before the survey was conducted, the College of Physicians and Surgeons of Ontario informed all physicians in the province that the receipt of benefits from corporate sources constituted a potential conflict of interest and that physicians accepting such benefits could be disciplined. The estimates reported in this chapter may therefore tend to minimize the extent of benefits received.

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TABLE 4.1 PRESCRIBING EXPERIENCES

	Statistic			
Variable	Mean	Minimum	Maximum	Std. Dev.
Inefficient Drugs	25.9%	.0%	100.0%	20.8
Generic Drugs	51.5%	.0%	100.0%	33.7
Discussions with Patients	25.2	.0	300.0	33.7
Suggested Reductions	6.2	.0	50.0	7.6
Patient Requests	2.5	.0	50.0	4.4
Unnecessary Prescriptions	2.5	.0	50.0	5.1

TABLE 4.2 PROFESSION OR GOVERNMENT CONTACTS IN LAST TWO YEARS

	Statistic			
Variable	Mean	Minimum	Maximum	Std. Dev.
Number of Seminars	3.0	.0	50.0	5.0
Number of CME Courses	1.9	.0	50.0	4.7
Number of Drug Trials	.9	.0	55.0	4.0
Number of Govt. Reviews	.1	.0	3.0	1.5
Number of Calls from Pharmacists	4.2	.0	150.0	11.5
Profession Contacts Index*	9.8	.0	185.0	

* This is an additive index summing scores on the first five variables in the table measuring frequency of contacts with the profession and government.

TABLE 4.3 CONTACTS WITH PHARMACEUTICAL COMPANIES IN LAST TWO YEARS

	Statistic			
Variable	Mean	Minimum	Maximum	Std. Dev.
Number of Visits	50.8	.0	999.0	82.2
Number of Seminars	5.2	.0	150.0	8.7
Number of Surveys	2.5	.0	50.0	5.1
Number of Drug Trials	.6	.0	16.0	1.4
Company Contacts Index*	56.4	.0	1016.0	

* This is an additive index summing scores on the first four variables in the table measuring frequency of contacts with the pharmaceutical industry.

TABLE 4.4 BENEFITS FROM PHARMACEUTICAL COMPANIES IN PAST TWO YEARS

Benefit	Physicians Accepting
Meals	57.0%
Stationery	47.7%
Conference Fees	10.2%
Travel Expenses	7.1%
Computer Equipment	2.6%
Office Services	1.7%
Mean Score Index of Benefits	1.3

TABLE 4.5 RESTRICTIONS ON PHARMACEUTICAL COMPANY REPRESENTATIVES

Restrictions	Percentage of Physicians
No Restrictions	34.4%
Some Restrictions	51.2%
No Visits Permitted	14.4%
Total	100.0%

CHAPTER 5

INFORMATION ABOUT DRUGS AND DRUG PRESCRIBING: SOURCES AND PROBLEMS

Of substantial interest are physicians' assessments of the sources and appropriateness of the information they have about prescriptions drugs. This assumes that relevant information from reliable sources is an essential prerequisite for what has been termed "rational prescribing," prescribing decisions which are both efficacious and cost-effective (Rucker and Visconti, 1979). Physicians in the survey were asked to assess the adequacy of their formal, medical training as the basis for their own professional practices, the relative importance of various sources of information about prescription drugs, and problems affecting their capacity to "keep up" professional knowledge in this area. The results are reported below.

5.1. Assessments of Medical Training

A majority of Ontario physicians are satisfied with the adequacy of their medical training "as preparation for prescribing drugs" to their patients. Just over 58 percent of respondents rate their undergraduate training as adequate (combining the responses "somewhat adequate" and "very adequate") while 24.7 percent rate it as inadequate ("somewhat inadequate" and "very inadequate"). The remaining 17.2 percent choose the middle or "neutral" response. Physician ratings of postgraduate medical training are even more positive: 74.6 percent of the physicians answering the question assess such training as adequate while only 13 percent say it was inadequate. Variations in these assessments are not associated with differences in physicians' professional characteristics or in the location of their medical training suggesting a broad base of satisfaction within the profession with conventional medical education.

5.2. Satisfaction with Professional Knowledge

In order to develop a more precise mapping of physician satisfaction with knowledge about prescription drugs, the survey asked respondents to assess their own current levels of knowledge in a number of specific areas. The results are presented in Table 5.2.

Greater numbers of Ontario physicians (63.1 percent) are satisfied with their knowledge about drug effectiveness than with knowledge about other aspects of prescription drugs. By contrast, few physicians (15.1 percent) rate their knowledge of drug costs as satisfactory; 61.9 percent say that they are "dissatisfied" or "very dissatisfied" with their knowledge in this area. Between these two extremes, 47.2 percent of physicians say that they are satisfied with their knowledge about prescription drug abuse; 40.6 percent say that they are satisfied with their knowledge concerning "the needs of special groups like children and the elderly;" 37.1 percent are satisfied with their knowledge about psychotropic drugs; and 33.5 percent, 24.6 percent and 20.1 percent respectively report satisfaction with their knowledge about non-drug alternatives, equivalencies of similar, but distinct drugs of the same pharmaceutical class, and equivalencies of competing brands of a drug. Interestingly, high volume prescribers are more likely than other physicians to rate as satisfactory their knowledge of drug effectiveness; however, they are least likely to express satisfaction with their knowledge of non-drug alternative therapies. (See Table C5.2)

Also presented in Table 5.2 is an "index of satisfaction with knowledge" which estimates the mean of physicians' scores over the eight survey items described above. Like the original items, this index ranges from 1 to 5, where 1 corresponds to a response of "very dissatisfied" and 5, to "very satisfied". For physicians as a group, the average score on the index is 3.0, precisely the mid-point of the response scale, indicating neither marked satisfaction nor dissatisfaction with overall knowledge about prescription drugs. While satisfied with their knowledge about some aspects of prescription drugs, and dissatisfied with their knowledge in other respects, Ontario physicians are therefore ambivalent about their general level of knowledge in this area. Older physicians and surgeons tend to be least satisfied with their overall level of knowledge about prescription drugs (see Tables C5.5 and C5.6). Male physicians are more satisfied than women with their knowledge about drug effectiveness, but less satisfied with their knowledge of non-drug alternative therapies.

5.3. Problems "Keeping Up" Professional Knowledge

If Ontario physicians tend to be satisfied with their medical training, but less than completely satisfied with their current levels of knowledge about prescription drugs, there may be specific problems which make it difficult to maintain currency in this area of professional knowledge. In the survey physicians were asked to rate a series of factors as problems affecting their capacity to "keep up" their professional knowledge about prescription drugs in their field of practice. Response options ranged from "not a problem" (scored 1) to "a serious problem" (scored 5).

Only minorities of physicians rate the six factors in the table as problems in the context of their own practices. For instance, 38.2 percent indicate that "lack of time" is a problem affecting their capacity to "keep up." Just over 29 percent rate "distrust of available information" in the same way. The percentages of physicians saying that "the rate of introduction of new drugs," an "inability to critically assess information" and "inadequate sources of information," are problems are 27.4, 25.1, and 17.7 respectively. It is worth noting that less than 2 percent of physicians view "lack of interest" as a problem.

Physicians' assessments of difficulties "keeping up" are related to differences in prescription volume. The results in Table C5.3 show that almost half (46.9 percent) of the highest volume prescribers compared to roughly a third (38.2 percent) of physicians overall, see "lack of time" as a problem and that a third of these physicians (34.5 percent) rate "inability to assess information" in the same way. Reflecting this, higher volume prescribers also score higher than other physicians on the summary "index of problems with knowledge." General practitioners and physicians in private group practices who tend to be high volume prescribers, also score higher on the problems index than specialists and physicians in other practice settings.

5.4. Information Sources

As discussed in Chapter 4, physicians are involved in a range of activities which may provide them with pertinent information about prescription drugs. However, individual activities or events may vary both in terms of frequency of participation and in terms of the

perceived importance of the information they provide to physicians. The survey therefore asked physicians to rate a number of potential sources of information in terms of their relative importance in their professional experience. Responses ranged from "not important" (scored 1) to "very important" (scored 5).

Looking at the figures in Table 5.4, 73.3 percent and 71.8 percent of physicians respectively rate professional meetings and conventions, and journal articles as important sources of information about prescription drugs in their own practices. Next in rank order are consultations with other physicians (68.0 percent), medical education courses (64.0 percent), rounds at the physician's main hospital (49.0 percent) and clinical pharmacists or pharmacologists (34.5 percent). Industry sources are ranked lower in importance by physicians: 24.6 percent say that seminars sponsored or organized by pharmaceutical companies are important sources of information, 18.7 percent rank pharmaceutical company representatives in the same way, and only 12.0 percent respond that advertisements or promotional literature are important.

These ratings are related to prescription volume (see Tables C5.4 to C5.6). While about two thirds of physicians (64.0 percent) indicate that Continuing Medical Education (CME) courses are an important source or information about prescription drugs in their practices, 76.3 percent of physicians writing 70 or more prescriptions in a week rate them as important, reflecting their higher rate of participation in such courses. Just the reverse is true for journal articles: only 58.8 percent of high volume prescribers, as compared to an average of 71.8 percent of all physicians, say that journals are an important source of information. High volume prescribers are also significantly more likely than other physicians to rate as important contacts with pharmaceutical company representatives and industry-sponsored seminars, again reflecting significantly higher rates of contact with corporate agents. These last results are confirmed by the higher scores of high volume prescribers on the "index of corporate sources," which sums and averages physicians' responses to the three survey items concerning the importance of pharmaceutical company representatives, seminars and advertisements as sources of information about prescription drugs. Compared to an average index score of 2.2 for low volume prescribers, the score for physicians writing 70 or more prescriptions a week is 2.8. Physicians in the most senior age cohort, who score lowest on

the index of satisfaction with knowledge about prescription drugs, score highest on the corporate sources index while physicians in private groups score highest on the problems index.

Summary and Discussion

The major findings in this chapter can be summarized as follows:

First, a majority of Ontario physicians rate their undergraduate medical education as an adequate basis for prescribing drugs in their own practices; however, a quarter rate their undergraduate training as inadequate. Three quarters of physicians with graduate medical training assess such training as adequate.

Second, in spite of these positive assessments of medical education, many physicians indicate that they are dissatisfied with their current knowledge about key aspects of prescribing. For instance, while two thirds of Ontario physicians are satisfied with their knowledge of drug effectiveness, only 15 percent are satisfied with their knowledge of drug costs, less than a quarter are satisfied with their knowledge concerning the equivalencies of similar drugs or competing brands of the same drug and just over a third are satisfied with their knowledge of non-drug alternative therapies. So, while a majority of physicians say that they are satisfied with their medical training and have good information about the effectiveness of the drugs they prescribe, only minorities indicate that their prescribing decisions are informed by what they believe to be satisfactory levels of knowledge about drug costs, drug alternatives, or indeed, alternative therapies not involving drugs. A lack of information in these areas, while not necessarily resulting in inappropriate prescribing, may ensure that prescribing decisions are made without consideration of the full range of treatment alternatives, including those which do not involve prescription drugs.

Third, although less than completely satisfied with their current knowledge about prescription drugs, only minorities of physicians identify problems "keeping up" their professional knowledge in this area. About one in four physicians evaluate the rate of introduction of new drugs, distrust of available information, and inability to assess information

as serious problems. However, one in three physicians overall, and half of the highest volume prescribers judge "lack of time" as a serious problem. With larger patient loads, time available to physicians for their own continuing education, and apparently, for counselling patients, decreases. Coincidentally, prescription volume and prescription density estimates increase with larger patient loads.

Fourth, professional meetings and journal articles are judged by majorities of physicians as important sources of information about prescription drugs in their own practices. Although the data in Chapter 4 show that Ontario physicians attend continuing medical education courses just more than once per year, two thirds rate such courses as important information sources. Conversely, while physicians have relatively frequent contacts with the pharmaceutical industry, only minorities rate involvement in company-sponsored seminars and contacts with drug company representatives as important information sources.

Fifth, physicians who write the largest number of prescriptions, and thus have a disproportionate influence on aggregate patterns of drug utilization in the province, appear to have more significant problems than other physicians with key aspects of their current knowledge about prescription drugs and more serious problems "keeping up." They are most likely, once again, to say that lack of time is a serious problem. The literature suggests that lack of time may be directly and inversely related to prescribing quality (Schwartz, Soumerai and Avorn, 1989). While attending more profession-sponsored courses and seminars than other physicians, high volume prescribers also have significantly more contacts with the pharmaceutical industry, receive a wider range of corporate benefits and judge industry contacts as relatively more important sources of information about prescription drugs than do other physicians. This does not argue that industry contacts or benefits cause physicians to prescribe inappropriately or in higher volume; only that when faced with lack of time and uncertainty, more familiar sources of information may have an important influence on prescribing decisions (Carruthers, Goldberg et. al., 1987: 178). Physicians who rely more heavily on drug company sources for their information have been identified in the literature as less rational prescribers (Lexchin, 1988).

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TABLE 5.1 ADEQUACY OF MEDICAL TRAINING

Level of Medical Training	Response*			
	Inadequate (1,2)	Neutral (3)	Adequate (4,5)	Total
Undergraduate	24.7%	17.2%	58.1%	100%
Postgraduate	13.1%	12.3%	74.6%	100%

* Responses range from 1, "very inadequate," to 5, "very adequate."

TABLE 5.2 SATISFACTION WITH KNOWLEDGE ABOUT PRESCRIPTION DRUGS

Area of Knowledge	Response[a]			
	Dissatisfied (1,2)	Neutral (3)	Satisfied (4,5)	Total
Drug Effectiveness	10.3%	26.6%	63.1%	100.0%
Abuse of Prescription Drugs	27.0	25.8	47.2	100.0
Needs of Special Groups	31.1	28.3	40.6	100.0
Psychotropic Drugs	27.0	35.9	37.1	100.0
Non-Drug Alternatives	30.1	36.4	33.5	100.0
Equivalencies of Similar Drugs	40.7	34.7	24.6	100.0
Equivalencies of Competing Brands	46.5	33.3	20.1	100.0
Drug Costs	61.9	23.0	15.1	100.0
Index of Satisfaction with Knowledge[b]				3.0

[a] Responses range from 1, "very dissatisfied" to 5, "very satisfied."

[b] This index sums and averages physicians' scores over the eight items in the table. Scores range from 1 to 5; the higher the score, the more satisfied the physician overall.

TABLE 5.3 PROBLEMS KEEPING UP PROFESSIONAL KNOWLEDGE ABOUT PRESCRIPTION DRUGS

Problem	Rating[a]			Total
	Not a Problem (1,2)	(3)	A Serious Problem (4,5)	
Lack of time	31.3%	30.5%	38.2%	100.0%
Distrust available info	41.9	29.0	29.1	100.0
Rate of introduction of new drugs	44.3	28.3	27.4	100.0
Inability to assess info	46.3	28.6	25.1	100.0
Inadequate info sources	56.3	26.0	17.7	100.0
Lack of interest	83.8	14.3	1.9	100.0
Index of problems with knowledge[b]				2.5

[a] Ratings range from 1, "not a problem," to 5, "a serious problem."

[b] This index sums and averages physicians' scores over the six items in the table. Scores range from 1 to 5; the higher the score, the more serious the problems with knowledge about prescription drugs overall.

TABLE 5.4 IMPORTANCE OF PHYSICIANS' INFORMATION SOURCES

Information Source	Rating[a] Not Important (1,2)	(3)	Very Important (4,5)	Total
Professional meetings	12.6%	14.1%	73.3%	100.0%
Journal articles	11.5	16.7	71.8	100.0
Consultations with physicians	8.5	23.5	68.0	100.0
Medical education courses	15.2	20.8	64.0	100.0
Hospital rounds	28.9	22.1	49.0	100.0
Clinical pharmacists	41.3	24.2	34.5	100.0
Pharmaceutical company seminars	41.4	34.0	24.6	100.0
Pharmaceutical company representatives	53.7	27.6	18.7	100.0
Advertisements, promotions	61.3	26.7	12.0	100.0
Index of professional sources[b]				3.5
Index of company sources[c]				2.5

[a] Ratings range from 1, indicating that the information source is "not important" to 5, indicating that it is "very important."

[b] This index sums and averages physician's scores over the first six items in the table from professional meetings to clinical pharmacists. Scores range from 1 to 5; the higher the score, the higher to overall importance of these six sources.

[c] This index sums and average physicians' scores over the final three items in the table from pharmaceutical company seminars to advertisements, promotions. Scores range from 1 to 5; the higher the score, the higher the overall importance of these three sources.

CHAPTER 6

PROFESSIONAL ISSUES

Chapter 6 examines physicians' views on issues related to drugs and drug prescribing. Central among these are physicians' evaluations of the impact of prescription drugs on health status, factors leading to increased aggregate prescription drug utilization levels, and non-clinical factors influencing prescribing decisions. Recent research suggests that physicians' subjective attitudes and perceptions toward health and health care delivery are important referents of their professional behaviour (McGavock, 1988; Stevenson and Williams, 1987).

6.1. Attitudes Toward Prescription Drugs

Table 6.1 shows that roughly half (48.6 percent) of the physicians surveyed "agree" or "strongly agree" that "the dollars spent on prescription drugs over the past ten years have had a positive impact on the health status of Ontario residents as a whole." However, a quarter (23.1 percent) explicitly disagree with this statement and 28.3 percent are neutral. Underlining the fact that there is less than complete agreement among Ontario physicians about the utility of patterns of drug use in the province, over half (55.4 percent) express the view that physicians tend to place "too much" or "much too much" emphasis "on prescription drugs when treating their patients;" only 6.3 percent indicate that there is "too little" emphasis. With respect to possible changes in their personal prescribing patterns, 15.8 percent of physicians say that compared to five years ago, they are now writing "more" or "many more" prescriptions for patients during typical weeks; 20.6 percent say they now write "fewer" or "many fewer" prescriptions. About a third (30.3 percent) of the physicians say that in their experience it "frequently" or "almost always" happens that "once older patients receive Ontario Drug Benefits, there is also an increase in the number of prescriptions they receive;" 40.1 percent say this happens "infrequently" or "almost never."

There is significant variation in responses to these items associated with differences in prescription volume, age and gender (see Tables C6.1, C6.5 and C6.6). For instance, large

volume prescribers have more positive assessments of the effects of prescription drugs: 56.4 percent of those ordering more than 70 prescriptions per week agree that prescription drug expenditures have had a positive influence on health status; this compares to just over a third (36.6 percent) of those writing between 2 and 15 prescriptions per week who agree. Higher volume prescribers are also more likely to report increases in the rate at which they prescribe: while 15.8 percent of physicians overall report that they write more prescriptions now than five years ago, a quarter (24.1 percent) of the highest volume prescribers report increases. This finding is important precisely because high volume prescribers have a disproportionately large impact on aggregate rates of prescription drug utilization in the province. Physicians in the most senior age category are more likely than younger ones to express the view that prescription drug expenditures have positively influenced health status, and they are among the least likely to say that prescription drugs are overemphasized. Fewer women than men (38.7 versus 51.6 percent) agree that prescription drugs have positively influenced health status.

6.2. Factors Influencing Utilization

Aggregate prescription drug costs may rise because utilization increases, leading to a greater volume of prescriptions at the same average per unit cost, or because drug prices increase, producing higher unit costs over the same volume. The survey asked physicians to rate the importance of factors "leading to increased overall prescription drug costs in Ontario over the past ten years". The response scale ranges from a low of 1, "not important", to a high of 5, "very important". Physicians' responses are reported in Table 6.2.

Nine out of ten physicians (87.1 percent) identify an aging population as an important factor leading to higher drug costs. The underlying assumption, expressed in comments attached to questionnaires, is that elderly individuals require greater numbers of prescriptions, and that increases in the number of elderly therefore lead to increases in prescription drug utilization. Next in rank order, 69.4 percent say that the "availability of new, more effective drugs" is an important factor influencing aggregate drug costs; 59.6 percent rate "lack of personal responsibility for health" in the same way; and 55.5 and 52.0 percent respectively indicate that "the proliferation of hi tech drugs" and "increasing public enrolment

in drug plans" have an important influence on rising drug costs. Substantial numbers of physicians also associate "too little emphasis on preventive care" (43.4 percent), "drug company profits" (40.6 percent), "lack of information" about non-drug alternatives (33.6 percent) and "pharmacists' dispensing fees" (31.7 percent) with higher overall drug costs.

6.3. Non-Clinical Influences on Prescribing

In the main, physicians' prescribing decisions will be governed by clinical factors. However, the literature suggests that especially when faced with uncertainty in diagnosis or by a range of treatment alternatives, physicians' choices may also reflect non-clinical considerations (Eisenberg, 1985; Mahon and Godden, 1973). The survey asked, "in addition to the clinical needs of your patients, how important" are certain factors "in influencing your prescribing decisions". Responses were scored from 1 to 5 where 1 indicates that a factor is "not important" and 5 that it is "very important."

There are marked differences in physicians' evaluations of the first three "economic" factors in the table concerning drug costs and the economic situation of the patient, compared to the remaining five "non-economic" factors involving influences from patients and peers. Just under 6 in ten physicians (58.3 percent) indicate that in addition to clinical factors, the patient's economic situation has an important influence on their prescribing decisions; 57.6 percent and 50.8 percent respectively say that the cost of a drug and the patient's enrolment in a drug plan have a similar influence. This pattern contrasts with the relatively small percentages of physicians who indicate that the need for defensive medicine (15.3 percent), pressures from patients (11.6 percent), the need "to do something" (6.7 percent) and peer pressure (5.9 percent) are important influences in this connection. While majorities of physicians say that they are sensitive to, and influenced by their own assessments of the economic situation of the patient and the cost of the drug, they are apparently less influenced by pressures stemming from their relations with patients or other physicians.

Physicians' assessments of these factors are related to prescription volume, specialty, and practice type (see Tables C6.3 to C6.5). Higher volume prescribers are more likely to indicate that the patients' economic situation, enrolment in a drug plan and cost of a drug

have an important influence on their prescribing decisions. Reflecting this, physicians writing more than 70 prescriptions per week score 3.7 on the index of "economic factors" which sums and averages responses to these three items; the corresponding score for physicians in the lowest prescription volume category is 2.9. High volume prescribers also score highest on the index of non-economic factors which measures responses to the remaining items in the table. Younger physicians and general practitioners also score higher than other physicians on both scales, suggesting that non-clinical influences are more significant for them than for older physicians and specialists. Finally, hospital-based physicians are less likely than physicians in other practice settings to indicate that the non-clinical factors cited in the questionnaire are important influences on their prescribing.

Summary and Discussion

Physicians' responses to the issues discussed in this chapter reveal a number of important patterns.

First, there is disagreement among practitioners about the use and effects of prescription drugs. Just over half of Ontario physicians agree that the dollars spent on prescription drugs in the past decade have had a positive effect on health status in the province; however, about a quarter of physicians explicitly disagree, suggesting that these expenditures have had no such impact. Further, more than half of the physician respondents indicate that there is currently too much emphasis on prescription drugs in treatment. Although physicians who prescribe drugs to their patients in the largest numbers are more likely than other physicians to agree that drug expenditures have had a positive impact on health status and to disagree that physicians rely too much on their use, significant numbers of even these physicians take the opposite position, that there has been no positive effect, and that drugs are over-emphasized.

Second, physicians see an aging population as a primary factor leading to increased prescription drug utilization in Ontario. They tend to view in the same way the "availability of new drugs" and the proliferation of "hi tech drugs" which presumably may permit the more effective treatment of some illnesses, including those prevalent among seniors. However,

physicians also identify as important influences on aggregate drug utilization rates factors not directly related to clinical diagnosis and treatment. The most important of these have to do with the perceived effects of insurance programs. For instance, almost a third of physicians associate access by the elderly to the Ontario Drug Benefit program with increased prescription volume. A majority also view increased public enrolment in drug benefit plans in this way. The logic underlying these perceptions is suggested by responses to another survey item: almost two thirds of physicians see lack of personal responsibility as an important influence on increased drug utilization. This association is consistent with comments appended to questionnaires, in which a number of physicians state the view that public drug plans artificially stimulate patient demand for prescription drugs by reducing or eliminating their direct economic liability, and that patient demands underlie increases in prescription drug utilization.

Third, in spite of the argument that higher rates of prescription drug utilization stem from patient demand, just a tenth of physicians cite "pressures from patients" or "the need to do something" as important influences on their prescribing decisions. Only slightly greater numbers view a need for "defensive medicine," which might also be seen as a response to patient behaviour, in this way. This is consistent with the findings reported earlier that demands for drugs from patients without full discussion of their medical problems are relatively rare, and that only in a small number of cases do physicians prescribe drugs which aren't strictly medically necessary. Indeed, the physician's own perceptions of the economic situation of the patient and of the patient's access to insurance coverage, would appear to be more important determinants of prescribing decisions. Instead of directly stimulating demand from patients, a main effect of drug benefit programs may be therefore to stimulate physicians to write more prescriptions, so that the effect is less on the demand side than on the supply side. In this connection, Schwartz et. al. (1989: 580) identify a general tendency on the part of physicians to overestimate patient demand because physicians will sometimes "confuse their patients' desire to know that they care with their own need to express concern for the patient" (see also Comaroff, 1976). The literature further suggests that this tendency on the part of physicians may be exacerbated by third party reimbursement programs which pay for prescriptions whether or not they can be shown to be clinically necessary and effective (Schwartz, Soumerai and Avorn, 1989: 580; Mahon and Godden, 1973: 90).

Fourth, non-clinical factors appear to be more significant for high volume prescribers. While this should not be interpreted as evidence of inappropriate diagnosis or treatment, it nevertheless emphasizes that prescribing decisions are not based purely on clinical considerations. Further, non-clinical factors are more important for physicians who have a disproportionate impact on aggregate patterns of prescription drug utilization in the province, so that a significant proportion of all prescribing may be discretionary in the strict medical sense. "Lack of time," a more serious problem for physicians who conduct large numbers of patient-visits and prescribe in volume, will also tend to reduce the time available for counselling individual patients and for considering nonpharmacological alternatives in treatment (Mahon and Godden, 1973: 90; Schwartz, Soumerai and Avorn, 1989: 580).

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TABLE 6.1 ATTITUDES TOWARD PRESCRIPTION DRUGS

Variable	Response	Percentage
Prescription drug spending has had a positive impact.	Disagree (1,2)	23.1%
	Neutral (3)	28.3
	Agree (4,5)	48.6
Current emphasis on prescription drugs	Too little (1,2)	6.3%
	Right amount (3)	38.3
	Too much (4,5)	55.4
Physicians now writing more prescriptions	Fewer (1,2)	20.6%
	Same (3)	63.6
	More (4,5)	15.8
Prescribing increased to elderly on ODB Plan	Infrequently (1,2)	40.1%
	Sometimes (3)	29.6
	Frequently (4,5)	30.3

TABLE 6.2 IMPORTANCE OF FACTORS LEADING TO INCREASED DRUG COSTS

Factor	Rating*			
	Not Important (1,2)	(3)	Very Important (4,5)	Total
An aging population	3.5%	9.4%	87.1%	100.0%
Availability of new drugs	8.2	22.4	69.4	100.0
Lack of personal responsibility	19.5	20.9	59.6	100.0
Proliferation of hi-tech drugs	16.4	28.1	55.5	100.0
Increased enrolment in drug plans	15.9	32.1	52.0	100.0
Too little preventive care	29.0	27.7	43.4	100.0
Drug company profits	24.6	34.8	40.6	100.0
Lack of information on non-drug therapies	38.5	27.9	33.6	100.0
Drug costs	34.0	34.2	31.7	100.0

* Ratings range from 1, "not important," to 5, "very important."

TABLE 6.3 IMPORTANCE OF FACTORS INFLUENCING PRESCRIBING DECISIONS

Factor	Rating[a] Not Important (1,2)	(3)	Very Important (4,5)	Total
Patient's economic situation	22.5%	19.2%	58.3%	100.0%
Cost of drug	18.1	24.3	57.6	100.0
Enrolment in a drug plan	27.0	22.2	50.8	100.0
Need for defensive medicine	62.8	21.9	15.3	100.0
Pressures from patients	67.0	21.4	11.6	100.0
Need to "do something"	76.8	16.5	6.7	100.0
Peer influence	76.1	18.1	5.9	100.0
Index of economic factors[b]				3.4
Index of non-economic factors[c]				1.9

[a] Ratings range from 1, "not important", to 5, "very important."

[b] This index averages physicians' scores over the first three items in the table from patient's economic situation to enrolment in a drug plan. Scores range from 1 to 5; the higher the score, the higher the overall rating of these items.

[c] This index averages physicians' scores over the last five items in the table from need for defensive medicine to drug company information. Scores range from 1 to 5; the higher the score, the higher the overall rating of these items.

CHAPTER 7

POLICY STRATEGIES

This final chapter of data analysis documents physicians' positions on a range of present or possible policy strategies to "monitor and improve" drug prescribing in Ontario. Broadly speaking, these strategies are focused on patients as consumers of prescription drugs; on the pharmaceutical companies as drug producers; on pharmacists in their professional capacity as dispensers; and on physicians as prescribers. This argues that consumers, producers, dispensers and prescribers each play significant roles in determining aggregate patterns of prescription drug utilization in Ontario.

7.1. Strategies for Patients

Table 7.1 presents physicians' responses to strategies aimed at patients. The figures in the table are percentages of all the physicians in the survey who approve (combining the questionnaire responses "strongly approve" and "approve) or disapprove (combining the responses "strongly disapprove" and "disapprove") of each strategy.

There is substantial support for policy strategies which would make information about prescription drugs and prescribing habits more readily available to patients and physicians. About three quarters of physicians (73.7 percent) approve of the suggestion that pharmacists should be required to notify patients when a drug substitution has occurred and 69.5 percent approve of the introduction of a "computerized smart card" containing a record of the patient's medical history and drug use. There is also substantial support for measures which would effectively limit public access to, and the range of services available under, drug benefit programs. Six in ten (60.2 percent) physicians support the elimination of ODB plan coverage of over-the-counter (OTC) drugs. A majority (58.8 percent) approve of the introduction of an "annual patient co-payment of $50 under the Ontario Drug Benefit Plan while just under half (49.4 percent) indicate that the number of drugs insured under the Plan

should be reduced. Conversely, only a minority (16.2 percent) of physicians support the extension of the Ontario Drug Benefit Plan to cover all Ontario residents. Note that high volume prescribers are significantly less likely than other physicians to support an expansion of the Ontario Drug Benefit plan and more likely to approve of copayments and reductions of plan coverage (see Table C7.1). Younger physicians and males also more strongly support patient co-payments (see Tables C7.5 and C7.6).

7.2. Strategies for Manufacturers

The survey responses reveal substantial support among Ontario physicians for strategies aimed at regulating the activities of the pharmaceutical industry. Table 7.2 shows that a large majority (84.2 percent) of responding physicians approve of the strategy of "requiring drug companies to include information about contraindications, side-effects and costs in their advertisements." A smaller, but still substantial proportion (63.5 percent) approve of "government licensing of new drugs only if they demonstrate significant improvements over available drugs." Less than majorities of physicians (46.3 and 44.3 percent respectively) approve of "public registration of all benefits over $100 provided by drug companies to physicians, pharmacists or government officials" and "coverage of only a limited number of products in each category under drug benefit plans." About a fifth (21.8 percent) support "legislation to limit to two years drug manufacturers' patent protection."

There are significant differences in physicians' responses to these strategies related to age, specialty and prescription volume (see Tables C7.2, C7.5 and C7.6). Physicians in the most junior age category are less likely than other physicians to support the proposition that new drugs should be licensed only if they can be shown to be improvements over existing drugs; general practitioners are more likely to support this strategy. Low volume prescribers are more likely to indicate that drug companies should be required to register benefits given to physicians and government officials and to support a two year limit on drug patent protection.

7.3. Strategies for Pharmacists

Table 7.3 records physicians' responses to strategies aimed at pharmacists. With one exception, majorities of physicians approve of each of the strategies identified in the table. In rank order, 87.9 percent of the physicians approve of regulations requiring pharmacists to report to the physician all suspected cases of "double doctoring" or prescription drug abuse; 76.6 percent approve or strongly approve of "regulations requiring pharmacists to notify patients when a drug substitution has occurred;" almost two thirds (65.0 percent) support "a central computerised system for recording and linking information about prescribing, dispensing and utilization;" 60.1 percent support "regulations requiring pharmacists to provide printed information on appropriate use and possible side-effects with each prescription;" and 56.0 percent approve of "regulations requiring substitution of lower cost interchangeable products in the absence of a no sub order by the physician." The exception to this pattern is that less than a majority (31 percent) of physicians approve of "a fixed annual fee covering the dispensing costs of all prescriptions to an individual," in effect, capitation payment.

The data reveal systematic response differences related to prescription volume (see Table C7.3). While most likely to take the position that pharmacists be required to report suspected cases of patient drug abuse to physicians, high volume prescribers are least likely to approve of a central, computerized system of information about prescribing, dispensing and utilization. They are also least likely to support regulations requiring pharmacists to provide printed information about drug use and side-effects with prescriptions, or to agree that lower cost products should be substituted in the absence of a "no-sub order" by physicians.

Significant response differences are also observed with respect to age, gender, method of payment and practice type. As shown in Tables C7.5 and C7.6, younger physicians, women and those working in CHC/HSOs are more likely than their older, male colleagues in other practice settings to approve of a centralized computer system to record prescribing and utilization and behaviour, and of the requirement that pharmacists provide relevant information with each prescription dispensed. Conversely, those paid primarily through fee-for-service are less likely than salaried or capitated physicians to support a

computerized information system or the requirement that information be provided when prescriptions are dispensed.

7.4. Strategies for Prescribers

Table 7.4 reports physicians' responses to strategies which concern them as prescribers. Eight out of ten physicians (81.8 percent) approve of "accredited continuing education courses in drugs and drug prescribing." Majorities likewise approve of "a professional review system to examine prescribing patterns which vary significantly from the norm" (63.9 percent) and "hospital committees to monitor and review the prescribing practices of physicians with admitting privileges" (54.9 percent). Smaller proportions of physicians support "mandatory recording of a physician's ID on prescriptions to facilitate audit and review" (40.9 percent) or "random audits of physicians' practices linking clinical diagnosis with drug, dosage and duration of therapy" (38.1 percent). Just 14.3 percent of the physicians surveyed approve of the Ontario government's recent move to eliminate the physician's option to receive "special authorization for a drug not listed under the Ontario Drug Benefit Plan."

Responses to two of the six prescriber strategies are significantly correlated with prescription volume. The data in Table C7.4 show that high prescribers are less likely than other physicians to support strategies which might be seen to regulate physicians' practices. Compared to the 63.9 percent of physicians overall who support the introduction of a professional review system, 52.0 percent of those in the highest volume category do so. High volume prescribers are also significantly less supportive of the proposal that physicians' IDs be recorded on all prescriptions to facilitate audit and review. Older physicians, those paid primarily through fee-for-service, and those in private group practice, among the highest volume prescribers, are also less likely to support these two measures (see Tables C7.5 and C7.6).

Summary and Discussion

The findings in this chapter can be summarized as follows.

First, there is only minority support among physicians for expansion of the Ontario Drug Benefit program. To the contrary, substantial numbers of Ontario physicians indicate that program coverage should be limited and that user co-payments should be introduced. This is consistent with the logic expressed by a number of physicians in their written comments, that public enrolment in insurance programs is accompanied by a decline in personal responsibility for health and an increase in prescription drug utilization driven by patient demand. However, note again that few physicians in the survey cite patient demands as having an important influence on their prescribing patterns. It is also important to note the results of Canadian research which indicate that patient charges, if sufficiently large to affect use, may have the unintended and negative effect of motivating individuals who cannot afford such charges to delay treatment, thus increasing hospitalization rates and health care costs (Badgley and Smith, 1979; Barer, Evans and Stoddart, 1979; Wolfson and Touhy, 1980).

Second, there is widespread agreement among physicians that pharmaceutical companies should be required to provide detailed information about the costs and effects of their products. A majority of physicians also support the position that new drugs should not be licensed unless they can be shown to be improvements over existing drugs. In addition, almost half of physicians support the proposal that drug companies should be required to disclose benefits provided to public officials and prescribers. In general, therefore, Ontario physicians support what has been termed a "regulatory model" for improving patterns of prescription drug utilization involving direct government control over the licensing and marketing of pharmaceuticals (Rucker and Visconti, 1979). One qualification to this support is that relatively few physicians approve of a possible reduction of drug manufacturer's period of patent protection to two years.

Third, large percentages of physicians believe that pharmacists should be required to report suspected cases of drug abuse, and all cases of drug substitution to the physician. Nevertheless, a majority also indicate that lower cost drugs should automatically be

substituted by pharmacists when the physician has not specifically ordered a more expensive drug. While apparently concerned with maintaining and reinforcing their central role in treatment management, many physicians thus support the use of generic drugs as a means of controlling costs. In this connection, the recent Commission of Inquiry on the Pharmaceutical Industry (Eastman, 1985) found that generic drugs were on average 51 percent of the cost of their brand name equivalents and that in 1983 the substitution of generics saved Canadians $211 million. Sixty percent of the physicians surveyed indicate that pharmacists should be required to provide relevant information to patients with each prescription dispensed but slightly less than a third approve of pharmacists being paid on a capitation basis.

Fourth, there is virtually unanimous support in principle for continuing medical education focused on drugs and drug prescribing. While physicians are satisfied with their medical training as the basis for prescribing, CME courses address the problem of currency of professional knowledge. However, in practice physician involvement in such courses may be limited both by lack of time and by the apparently greater attractiveness of informational events organized by the pharmaceutical industry. Majorities of the physicians surveyed also approve of hospital committees to monitor physicians' prescribing patterns and of the establishment of a professional review system to investigate physicians whose patterns are beyond professional norms. However, only minorities of physicians approve of the compulsory identification of physicians on prescriptions dispensed to patients, or random audits of physicians' practices. Thus physicians' substantial measure of support for what is generally called the "drug use review" or "DUR" model (Rucker and Visconti, 1979) is qualified by resistance to measures which would increase the likelihood that their own practices, and not just practices which are obviously suspect, would be subject to review.

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TABLE 7.1 STRATEGIES FOR PATIENTS

Strategy	Response*			Total
	Disapprove (1,2)	Neutral (3)	Approve (4,5)	
Notification of drug substitution	8.1%	18.2%	73.7%	100.0%
Computerized smart card	13.6	16.9	69.5	100.0
Ending OTC coverage	23.3	16.5	60.2	100.0
Annual $50 ODB co-payment	19.9	21.3	58.8	100.0
Limiting ODB plan coverage	29.8	20.8	49.4	100.0
Extending ODB plan coverage	70.4	13.4	16.2	100.0

* Ratings range from 1, "strongly disapprove," to 5, "strongly approve."

TABLE 7.2 STRATEGIES FOR DRUG MANUFACTURERS

Strategy	Response*			Total
	Disapprove (1,2)	Neutral (3)	Approve (4,5)	
Regulating advertisements	4.1%	11.7%	84.2%	100.0%
Licensing only improved drugs	20.5	16.0	63.5	100.0
Registering benefits over $100	23.2	30.5	46.3	100.0
Covering limited drug products	32.0	23.7	44.3	100.0
Two year patent protection	53.1	25.1	21.8	100.0

* Ratings range from 1, "strongly disapprove," to 5, "strongly approve."

TABLE 7.3 STRATEGIES FOR PHARMACISTS

Strategy	Response*			Total
	Disapprove (1,2)	Neutral (3)	Approve (4,5)	
Reporting abuse to physician	4.7%	5.6%	89.7%	100.0%
Notifying patient of substitution	8.0	15.4	76.6	100.0
Computerized info system	11.6	23.4	65.0	100.0
Info on each prescription	17.8	22.1	60.1	100.0
Require lower cost substitutes	29.4	19.6	56.0	100.0
Fixed annual dispensing fee	41.2	28.0	30.8	100.0

* Ratings range from 1, "strongly disapprove," to 5, "strongly approve."

TABLE 7.4 STRATEGIES FOR PRESCRIBERS

Strategy	Response*			Total
	Disapprove (1,2)	Neutral (3)	Approve (4,5)	
Continuing education courses	3.6%	14.6%	81.8%	100.0%
Professional review system	16.5	19.6	63.9	100.0
Hospital monitoring committees	23.1	22.0	54.9	100.0
Recording physician's ID	26.9	32.2	40.9	100.0
Random audits of physicians	34.3	27.6	38.1	100.0
Eliminating CDB special authorization	67.8	17.9	14.3	100.0

* Ratings range from 1, "strongly disapprove," to 5, "strongly approve."

CHAPTER 8

SUMMARY AND CONCLUSIONS

This final chapter reviews and summarizes the major patterns of findings from the survey of physicians. While data of the type presented here can never adequately illustrate the dynamics or determinants of professional attitudes and behaviour, the results nevertheless suggest a number of important conclusions about the ways in which physicians approach prescription drugs, factors influencing their prescribing decisions, and strategies for improving prescribing.

8.1. Medical Education and Professional Information

Medical training at the undergraduate and graduate levels sets the stage for physicians' perceptions and behaviour in practice. Recent Canadian work has reemphasized the powerful influence of years of arduous medical training not just on the acquisition of bio-medical skills and knowledge, but on physicians' more general orientations toward health and health services delivery (Haas and Shaffir, 1981; Maheux, 1988). In this connection, substantial majorities of the physicians surveyed are satisfied with their undergraduate and graduate medical education as preparation for prescribing in their own practices. This generally positive assessment is shared by younger and older physicians, men and women, specialists and general practitioners, physicians in different practices settings, and by those who prescribe in different volume.

However, substantial numbers of physicians are dissatisfied with their current knowledge about key aspects of prescribing, suggesting the limits of conventional medical education in a field which is rapidly and constantly changing. While about six in ten physicians are confident in their ability to judge drug effectiveness, less than a third are satisfied with their knowledge of equivalencies of similar drugs or different brands of the same drug. Only a third of physicians are satisfied with their knowledge of non-drug alternatives and less than a fifth are satisfied with their knowledge of drug costs. These findings suggest that prescribing decisions will often be made within a relatively restricted

range of knowledge about the drugs physicians are already familiar with, precluding or reducing the possibility that other, possibly more cost-effective drugs will be utilized, or indeed, that non-pharmacological alternatives will be considered.

While pointing, therefore, to deficiencies in current levels of knowledge about prescription drugs, fewer physicians identify serious impediments to "keeping up." For example, only minorities of physicians indicate that information sources are inadequate or that they distrust the information available to them. Only slightly more than a quarter of physicians suggest that the rate of introduction of new drugs constitutes a problem.

If physicians do perceive a problem, it would appear to be "lack of time." Over a third of all physicians in the survey, and almost half of the highest volume prescribers, cite lack of time as an important barrier to "keeping up" their professional knowledge about prescription drugs. This argues that problems in the area are rooted less in the weaknesses of formal medical training than in the demands of professional practice itself, in the difficulty of maintaining the currency of professional knowledge while managing large workloads. As workloads increase, time for "keeping up" will tend to decrease. This finding constitutes an important qualification to physicians' almost universal support for Continuing Medical Education courses: although more such courses may be offered, time pressures may limit participation especially among those physicians who write the largest number of prescriptions.

8.2. Information Sources

If prescribing decisions are constrained by the extent of the physician's knowledge about drug and non-drug therapeutic alternatives, and such knowledge is itself constrained by the time available to physicians to engage in forms of continuing education, a key issue concerns the sources and quality of the limited information which physicians do receive.

The data indicate that many Ontario physicians participate in activities which constitute important sources of information about prescription drugs. For instance, physicians report that on average they attended about three profession-sponsored seminars

and two Continuing Medical Education courses in the two years before the survey. Again, it is worth stressing that the large majority of physicians both support such courses in principle and regard them as important information sources. Other potential sources of information remain underdeveloped: few physicians are involved in hospital-based clinical drug trials, fewer have had their practices reviewed by the profession or government, and contacts between physicians and pharmacists, two of the key actors in the prescription drug marketplace, are rare, occurring on average, twice a year.

In comparison, contacts between physicians and the pharmaceutical industry are frequent. While less than a quarter of the survey respondents rate such contacts as important information sources, the average physician attends roughly twice as many industry-sponsored seminars about prescription drugs as seminars sponsored by the profession. Physicians also have very extensive, monthly or even weekly contacts with the industry through "detail men," whose primary function, as the title suggests, is to provide physicians with details of the specific products their companies sell in order to increase sales. To the extent that physicians do receive information about prescription drugs through these contacts, such information is unlikely to be purely objective, to highlight the shortcomings of a product, to recommend competing products, or to deal with alternatives to prescription drugs. In written comments appended to questionnaires, physicians stated that "detail men" will often argue that "brand names" are superior in quality to their generic equivalents. Thus, even though physicians tend to rate industry contacts as relatively unimportant sources of information, the sheer volume of such contacts may nevertheless ensure that they have an impact on prescribing. And because of their significantly more frequent contacts with industry representatives, this impact is likely to be most marked among physicians who write the most prescriptions.

The apparently greater attractiveness of industry-related events and contacts may be in part related to the range of "perks" offered to physicians. Majorities of Ontario physicians report that they have accepted meals and stationery from industry sources. Small numbers report the receipt of more significant benefits including conference fees, travel expenses and computer hardware and software. While failing to demonstrate that industry contacts and benefits received directly influence prescribing patterns, the data show that those physicians

who have the highest frequency of contacts with the industry and who receive the widest range of benefits are also the highest volume prescribers.

8.3. Attitudes and Experiences in Practice

Ontario physicians report that they conduct an average of 96 patient-visits and write 54 prescriptions during typical weeks in practice. Thus, about half of all patient-visits conducted result in prescriptions. General practitioners, older physicians, males, physicians in private group practices, and those paid through fee-for-service, tend to prescribe more drugs and more drugs per patient than specialists in internal medicine, younger physicians, women, physicians in hospitals and CHC/HSOs, and those paid through salary and capitation.

Given the sheer volume of prescriptions written in Ontario, it is hardly surprising that there would be some disagreement within the profession about the results. Half of the physicians surveyed agree that the dollars spent on prescription drugs in Ontario over the past ten years have had a positive effect on health status; but a quarter explicitly disagree and the rest are neutral. The roots of this mixed response may be found in physicians' assessments of factors influencing drug utilization. While many physicians indicate that these roots lie in the expansion of natural demand--in an increase in the number of elderly requiring treatment, and in the greater availability of new drugs and "hi tech" drugs used to treat illness more effectively--another source of demand is seen to lie outside of the clinical sphere, in the expansion of drug benefit plans and in the concomitant decline of personal responsibility for health. To the extent that these latter factors are seen by physicians to cause increased drug utilization, patterns of utilization thus may be seen as having a less direct impact on health status.

Nevertheless, the survey responses fail to make the case that increased prescription drug utilization flows primarily from increased demand from patients stimulated by drug benefit coverage. Half of the survey respondents say that physicians place too much emphasis on prescription drugs when treating their patients. Only about one in ten physicians say that patient demand is an important influence on their prescribing decisions or that they are motivated by the related needs "to do something" or to practice "defensive

medicine". And physicians report few requests from patients for drugs without proper consideration of the patient's condition and few instances of ordering unnecessary drugs which might result from such requests. Instead, physicians indicate that their own assessments of the patient's economic situation and access to a drug plan constitute important influences on their prescribing decisions. According to Schwartz, Soumerai and Avorn (1989: 580) physicians will often tend to overestimate patient demand for prescription drugs because of their own desire to express concern for the patient. This tendency may be reinforced by drug benefit plans which pay for drugs even if their effectiveness is not demonstrated (Mahon and Godden, 1973).

Ineffective drugs will also reduce the positive aspects of prescribing patterns. Physicians estimate that a quarter of the drugs they are familiar with do not produce results commensurate with their costs. It is not clear from this whether physicians will actually prescribe drugs which they think are not cost-efficient, or whether they will turn to more cost-efficient alternatives. This latter possibility may be indicated by physicians' reports that up to half of the prescriptions they write are for generics.

Counselling may also have an important impact on patterns of drug utilization and on the outcomes of drug therapies. About half of the time, prescriptions written in Ontario appear to be accompanied by review and discussion of the patient's drug use, and in about a fifth of cases physicians say they recommend reductions. However, physicians who have the largest volume practices and write the most prescriptions are significantly less likely to engage their patients in discussions about drug use or to recommend reductions. Thus, a significant proportion of the prescriptions written in Ontario may not be accompanied by review or counselling. The lower likelihood that physicians with large volume practices will discuss and review prescriptions with their patients suggests, once again, that time is a critical variable, and that physicians in large volume practices have less time for counselling their patients (Mahon and Godden, 1973: 89). This is problematic because time spent with patients has been found to be directly and inversely related to prescribing quality (Schwartz, Soumerai and Avorn, 1989: 577).

8.4. Policy Strategies

The assumption that drug utilization is largely patient driven, and that patients are more likely to demand prescriptions under drug benefit plans, is suggested again by physicians' responses to the policy strategies aimed at patients. A majority of physicians indicate that the scope of the Ontario Drug Benefit program should be reduced by removing coverage of over-the-counter drugs and limiting the number of prescription drugs covered. A majority also approve of the introduction of an annual patient co-payment which would increase the direct financial liability of patients and thus presumably reduce inappropriate demand for prescription drugs. A large proportion of Ontario physicians also support the introduction of a computerized "smart card" containing an electronic record of the patient's medical history and drug use.

Only a small number of physicians take the position that the extended patent protection granted to the pharmaceutical companies under recent federal legislation should be reduced. Nevertheless, there is substantial support for strategies to regulate pharmaceutical companies in the prescription drug marketplace. A majority of physicians agree that prescription drug advertisements should be required to include information about costs and effects, areas in which physicians are less than satisfied with their levels of knowledge. A majority also approve of the suggestion that new drug products should be licensed only if they can be shown to constitute improvements over existing products. And almost half of the respondents indicate that companies should be required to publicly register company benefits given to government officials or physicians.

Physicians strongly support strategies which would strengthen pharmacists' professional obligations toward them and their patients. Almost all respondents take the position that pharmacists should be required to report suspected cases of prescription drug abuse to the physician. A substantial majority also indicate that pharmacists should have to report to the patient all instances of prescription drug substitution, while at the same time requiring pharmacists to substitute generic drugs when not specifically ordered not to do so by prescribers. Physicians also express strong support for a computerized drug information system for recording and linking information about prescribing, dispensing and utilization.

In addition to their approval of strategies aimed at other actors in the prescription drug marketplace, majorities of physicians approve of strategies which involve review of prescribing practices. Besides expressing virtually unanimous support for continuing medical education courses focused on prescription drugs, substantial proportions of physicians support the introduction of a professional review system and the use of hospital committees to monitor prescribing. However, physicians are less willing to support strategies which may be seen to imply third party, or government review and regulation of their own practices. For example, less than half of the respondents approve of the relatively simple measure of requiring the physician's identification to be recorded on all prescriptions dispensed under their orders, or random audits of physicians' practices. High volume prescribers are systematically less likely than other physicians to support policy strategies which imply review of their prescribing practices.

In conclusion, substantial proportions of Ontario physicians support a range of current or possible policy strategies for monitoring and improving prescribing. Strategies with the most support can be broadly categorized as "informational." These include the introduction of a computerized "smart card;" regulations requiring drug manufacturers to include more comprehensive information in their advertisements; regulations requiring pharmacists to report suspected cases of drug abuse to physicians, and all cases of drug substitution to patients; and continuing medical education courses. There is less, but still significant support for a range of other strategies involving the more direct monitoring and review of patients, pharmaceutical companies, pharmacists and physicians.

The problem of lack of time for gathering and assimilating information and for counselling patients on the use of prescription drugs is more difficult. Physicians are clearly constrained by the demands of their practices. This is especially true for physicians with high volume practices who conduct large numbers of patient-visits during typical working weeks and order large numbers of prescriptions. Strategies aimed at providing more information to physicians through courses of continuing education or professional review, or indeed, through computerized data bases, will add to these demands. Under the dominant fee-for-

service payment system, there is no incentive for physicians to upgrade their skills or knowledge--poor prescribers are rewarded at the same rate as good ones. To the contrary, individual physicians who take the time to participate in continuing education or to counsel their patients more extensively will suffer a relative decline in income. Thus, the policy strategies addressed in this report must be considered within the wider context of the structure of the health services delivery system in Ontario, and possible alternative structures which would encourage and reward good prescribing.

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APPENDIX A

QUESTIONNAIRE AND COVER LETTERS

PHARMACEUTICAL
INQUIRY OF
ONTARIO

Dear Doctor:

We need your help. We are asking you to put aside thirty minutes of your time to complete the attached **confidential** questionnaire. Its purpose is to clarify a number of important points relating to the prescribing of drugs in Ontario.

As in so many aspects of health care delivery, physicians play a central role in the utilization of prescription drugs. The Pharmaceutical Inquiry of Ontario, which has a mandate to examine the use of prescription drugs, will be making recommendations to the Provincial Government that could affect physicians and their education. It is important that the recommendations be based on accurate information.

Professors Rhonda Cockerill (University of Toronto) and Paul Williams (Ryerson Polytechnical Institute) are conducting the study of a sample of Ontario physicians on behalf of the Pharmaceutical Inquiry, and with the assistance of the College of Physicians and Surgeons of Ontario and the Ontario Medical Association.

We urge you to complete the questionnaire and return it as soon as possible.

Sincerely yours,

E J Moran Fred Lowy Michael Dixon

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Frederick Lowy, M.D.
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April 1989

Dear Doctor,

We are writing to invite your participation in a survey which asks practising physicians across Ontario their views on a number of important issues concerning prescription drugs. We believe that it is vital to understand the experiences and opinions of practitioners like yourself before considering possible strategies for monitoring and improving drug prescribing.

This survey is being conducted as part of the Pharmaceutical Inquiry of Ontario which will make recommendations to government about policies relating to prescription drugs. The enclosed questionnaire was designed in consultation with physicians in a variety of practice settings, and we believe that even a quick glance will demonstrate its relevance to your professional concerns. The survey is endorsed by the Ontario College of Physicians and Surgeons and the Ontario Medical Association.

We should stress that it is not necessary to be in full-time clinical practice to answer the questionnaire. If there are questions which do not apply to your situation, please skip them and answer the questions that do. It is important that the results represent the Ontario profession as a whole.

Please be assured that the responses of individual physicians will be kept **strictly confidential**. Our agreement with the independent survey research organization conducting the field work does not permit us to know the identity of any responding physician. The number on your questionnaire is for administrative purposes only.

In closing we ask you to take the time to complete and return the enclosed questionnaire. Your response will ensure that the views of Ontario physicians are taken into account when considering policies about prescription drugs.

Yours sincerely,

Rhonda Cockerill

Rhonda Cockerill, PhD.
Professor

P. Williams

A. Paul Williams, PhD.
Professor

Pharmaceutical Inquiry of Ontario

1989 Survey of Physicians

This questionnaire should be completed by the physician **personally**. All responses will be kept **strictly confidential**.

A. Information Sources and Needs

The first section of the survey is concerned with your educational preparation and access to information about drugs and drug prescribing.

*Because the survey aims to gather responses from physicians in a range of professional settings, all questions may not apply to your practice. Please indicate this by writing **NA** where appropriate.*

1. How would you rate your undergraduate medical training as preparation for prescribing drugs to your patients? (Please circle the appropriate number on the right).

very inadequate	1
somewhat inadequate	2
neutral	3
somewhat adequate	4
very adequate	5

2. What about your postgraduate medical training as preparation for drug prescribing?

very inadequate	1
somewhat inadequate	2
neutral	3
somewhat adequate	4
very adequate	5
n.a.	8

3. How serious are each of the following as problems affecting your capacity to *keep up* your professional knowledge about prescription drugs in your field of practice? (Please enter the appropriate number on the line to the right.)

not a problem 1	2	3	4	a serious problem 5	
a. rate of introduction of new drugs					___
b. lack of time					___
c. inadequate sources of information					___
d. distrust of available information					___
e. inability to critically assess information					___
f. lack of interest					___
g. other (please specify)					___

4. Using the response options below please indicate how satisfied or dissatisfied you are with your current level of knowledge in each of the following areas concerning prescription drugs.

very dissatisfied 1	dissatisfied 2	neutral 3	satisfied 4	very satisfied 5	
a. drug costs					___
b. drug effectiveness					___
c. equivalencies of competing brands of a drug					___
d. equivalencies of pharmacologically similar but distinct drugs, of the same therapeutic class					___
e. the needs of special groups like children and the elderly					___
f. abuse of prescription drugs					___
g. psychotropic drugs					___
h. non-drug alternative therapies					___
i. other (please specify)					___

5. Physicians obtain professionally-related information from a variety of sources. How important is each of the following as a source of information about prescription drugs for you in your practice?

not important 1	2	3	4	very important 5	
a. journal articles					___
b. professional meetings and conventions					___
c. seminars sponsored or organized by pharmaceutical companies					___
d. rounds at your main hospital					___
e. advertisements, promotional literature					___
f. continuing medical education courses					___
g. pharmaceutical company representatives					___
h. consultations with other physicians					___
i. clinical pharmacists or pharmacologists					___
j. the Ontario Drug Benefit Plan formulary					___
k. other (please specify)					___

B. Professional Practice

This section of the questionnaire asks about your experiences in practice. ***If you do not provide patient care, please skip directly to Section C on the following page.***

1. In a typical week, about how many patient-visits will you conduct?

   patient-visits _ _ _

2. During the same typical week, about how many prescriptions, including renewals, will you write for your patients?

   number of prescriptions _ _ _

3. What percentage of these prescriptions will be for generic drugs?

   generic drugs _ _ _ %

4. Compared to five years ago, would you say that on average you are now writing fewer or more prescriptions for each patient you see during a typical week?

   - many fewer 1
   - fewer 2
   - about the same number 3
   - more 4
   - many more 5

5. There have been reports that once older patients receive Ontario Drug Benefits, there is also an increase in the number of prescriptions they receive. In your experience does this happen . . .

   - almost never 1
   - infrequently 2
   - some of the time 3
   - frequently 4
   - almost always 5

6. **In addition to the clinical needs of your patients**, how important is each of the following in influencing your prescribing decisions?

   not important 1 — 2 — 3 — 4 — very important 5

   a. the patient's economic situation ..... _
   b. enrolment in a drug plan ..... _
   c. the cost of a drug ..... _
   d. pressures from patients to prescribe ..... _
   e. the need *to do something* ..... _
   f. peer influence ..... _
   g. information from drug companies ..... _
   h. the need to practice *defensive medicine* ..... _
   i. other (please specify) ..... _

   _

7. During a typical week on how many separate occasions would each of the following occur in your professional practice?

	number o occasion
a. a patient asks you to prescribe a particular drug without having fully discussed their complaint or problem	_ _
b. you counsel a patient to reduce the number of drugs taken or not to take a particular drug	_ _
c. you end a visit with a prescription even though it may not be strictly medically necessary	_ _
d. you review and discuss with a patient the drugs he or she is taking	_ _

8. For all your patients with high serum cholesterol levels what percentage do you treat with

   nicotinic acid _ _ _ %

9. For all your patients with high serum cholesterol levels who are 65 or older, what percentage do you treat with . . .

   prescription medication _ _ _ %

   diet and weight reduction as necessary _ _ _ %

10. Physicians have expressed concerns about the costs and effectiveness of different drugs. Of the drugs you are familiar with, about what percentage would you say do not produce results comensurate with their costs?

___%

11. Various government and professional groups play a role in informing physicians about prescription drugs. *During the past two years*, on how many *separate occasions* have you ...

	number of occasions
a. attended seminars or conferences on prescription drugs sponsored by physicians' groups	___
b. attended a Continuing Medical Education (CME) course on prescription drugs	___
c. had your prescribing practices reviewed by the College or government	___
d. participated in a hospital-based clinical drug trial	___
e. been called by a pharmacist about drug profiles, contraindications or adverse effects	___

12. Pharmaceutical companies play a role in the development and marketing of prescription drugs. *In the past two years* on how many *separate occasions* have you ...

	number of occasions
a. been visited by a pharmaceutical company representative	___
b. attended a seminar or conference sponsored by a pharmaceutical company	___
c. received a drug company survey about your prescribing patterns	___
d. participated in a drug trial sponsored by a pharmaceutical company	___

13. In your practice are there any restrictions on visits by pharmaceutical company *detail men*?

no restrictions	1
no visits permitted	2
some restrictions (please specify)	3

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14. In the past two years, have you accepted any of the following from pharmaceutical company representatives? (Please circle the appropriate response for each item.)

	no	yes
a. meals	1	2
b. conference fees	1	2
c. stationary such as prescription pads	1	2
d. travel expenses	1	2
e. office services	1	2
f. computer hardware or software	1	2
g. other (please specify)	1	2

C. Professional Issues

This section of the questionnaire asks for your views on the costs of prescription drugs and possible strategies for improving prescribing patterns.

1. First, please estimate the percentage of the total private and government health care dollar in Ontario now spent on prescription drugs.

percentage spent on drugs ___%

2. In general, would you agree or disagree that the dollars spent on prescription drugs over the past ten years have had a positive impact on the health status of Ontario residents as a whole?

strongly disagree	1
disagree	2
neutral	3
agree	4
strongly agree	5

3. At the present time, do you think that Ontario physicians tend to place too little, too much or about the right amount of emphasis on prescription drugs when treating their patients?

much too little emphasis 1
too little emphasis 2
about the right amount 3
too much emphasis 4
much too much emphasis 5

4. How would you rate each of the following as factors leading to increased overall prescription drug costs in Ontario over the past ten years?

not important				very important
1	2	3	4	5

a. an aging population ..... —
b. availability of new, more effective drugs ..... —
c. drug company profits ..... —
d. too little emphasis on preventive care ..... —
e. increasing public enrolment in drug plans ..... —
f. pharmacists' dispensing fees ..... —
g. proliferation of *hi tech* drugs ..... —
h. lack of information about non-drug therapies ..... —
i. lack of personal responsibility for health ..... —
j. other (please specify) ..... —

5. Listed below are a number of present or possible strategies to monitor and improve drug prescribing in Ontario. Using the response options, please indicate your position on each strategy.

Strategies for Pharmacists

strongly disapprove	disapprove	neutral	approve	strongly approve
1	2	3	4	5

a. regulations requiring substitution of lower cost *interchangeable* products in the absence of a *no sub* order by the physician ..... —

b. a central computerised system for recording and linking information about prescribing, dispensing and utilization ..... —

c. regulations requiring pharmacists to provide printed information on appropriate use and possible side-effects with each prescription ..... —

d. a fixed annual fee covering the dispensing costs of all prescriptions to an individual ..... —

e. regulations requiring pharmacists to report all suspected cases of *double doctoring* or prescription drug abuse to the physician ..... —

f. regulations requiring pharmacists to notify patients when a drug substitution has occurred —

Strategies for Drug Manufacturers

strongly disapprove	disapprove	neutral	approve	strongly approve
1	2	3	4	5

g. government licencing of new drugs only if they demonstrate significant improvements over available drugs ..... —

h. public registration of all benefits over $100 provided by drug companies to physicians, pharmacists or government officials ..... —

i. regulations requiring drug companies to include information about contraindications, side-effects and costs in their advertisements ..... —

j. legislation to limit to two yearsdrug manufact urers' patent protection ..... —

k. coverage of only a limited number of products in each category under drug benefit plans ..... —

Strategies for Prescribers

strongly disapprove	disapprove	neutral	approve	strongly approve
1	2	3	4	5

l. introduction of a professional review system to examine prescribing patterns which vary significantly from the norm ..... —

m. hospital committees to monitor and review the prescribing practices of physicians with admitting privileges ..... —

n. accredited continuing education courses in drugs and drug prescribing ..... —

o. random audits of physicians' practices linking clinical diagnosis with drug, dosage and duration of therapy ..... —

p. elimination of the physician's option to receive special authorization for a drug not listed under the Ontario Drug Benefit Plan ..... —

q. mandatory recording of a physician's ID on prescriptions to facilitate audit and review ..... —

Strategies for Patients

strongly disapprove 1	disapprove 2	neutral 3	approve 4	strongly approve 5

r. expansion of the Ontario Drug Benefit Plan to cover all Ontario residents ..... —

s. introduction of a computerised *smart card* containing the patient's medical history and drug use which can be read by doctors and pharmacists ..... —

t. establishment of an annual patient co-payment of $50 under the Ontario Drug Benefit Plan ..... —

u. limiting the number of drugs insured under the Ontario Drug Benefit Plan ..... —

v. elimination of Ontario Drug Benefit Plan coverage of over-the-counter drugs ..... —

w. regulations requiring pharmacists to notify patients when a drug substitution has occurred —

6. Are there other strategies for monitoring and improving drug prescribing which you support? (Please specify.)

_____

_____

_____

D. Characteristics of Practice

This final section asks about the characteristics of your professional practice. Because practice is so complex this entails a fairly detailed set of questions.

1. About what percentage of your time in practice is spent in each of the following positions?

a. hospital and nursing home staff ..... ___%
b. academic staff ..... ___%
c. government staff (including health departments) ..... ___%
d. community health centre/health service organization staff ..... ___%
e. corporate staff ..... ___%
f. other staff ..... ___%

total ___%

If more than two-thirds of your time is spent in staff positions, please skip to question 8.

2. In your practice, are you currently in a partnership or any other form of business arrangement with other physicians for providing medical services?

no 1
yes 2

3. Do you have formal arrangements with other physicians in a group for sharing income and expenses?

no 1
yes 2

4. Do you have arrangements with other physicians in a group for sharing patient coverage, on call hours, and so on?

no 1
yes 2

5. Do you utilize common patient records for diagnosis and treatment with other physicians in a group?

no 1
yes 2

If more than two thirds of your time is spent in solo practice, please skip to question 10.

6. With how many other full-time physicians, if any, are you associated in a partnership, community health clinic or other form of group practice?

number of full-time physicians _ _

7. How important are each of the following as factors determining the incomes of physicans in your group?

not important 1 ---- 2 ---- 3 ---- very important 4 ---- important 5

a. years in practice ..... —
b. time in group ..... —
c. volume and mix of services provided ..... —
d. administrative responsibility ..... —
e. dollar investment ..... —
f. enrolled patients ..... —

8. Does your group or institution monitor or review the following aspects of physicians' practices?

	no	yes
a. hospitalization patterns	1	2
b. prescribing	1	2
c. workloads	1	2
d. lab tests	1	2
e. billing practices	1	2

9. Would you characterize your practice in association with other physicians as

family and general practice 1
single specialty 2
multiple specialty *including* family practice 3
multiple specialty *not including* family practice 4

10. About how many patients, if any, would regard you as their personal physician?

number of patients _ _ _ _

11. Considering your last typical working week, about how many hours, exclusive of *on call*, did you work?

total hours _ _

12. About how many hours during that typical working week were spent in the following professional activities?

	hours
a. hospital or nursing home in-patient care	_ _
b. hospital out-patient or emergency care	_ _
c. patient care in your own office	_ _
d. home visits	_ _
e. administration, paperwork, meetings	_ _
f. continuing education, reading	_ _
g. teaching and research	_ _
h. *on call*	_ _
i. other (please specify)	_ _

_____

13. How many weeks of vacation did you take during 1988?

weeks of vacation _

14. About what percentage of your total professional earnings are derived from

a. fee-for-service ..... _ _ _
b. salary ..... _ _ _
c. capitation ..... _ _ _

total 100

15. Are you certified as a specialist (including the College of Family Physicians)?

- no 1
- yes, College of Family Physicians 2
- yes, other specialty (please specify) 3

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16. Are you

- female 1
- male 2

17. Where did you complete your undergraduate medical training?

- Ontario 1
- rest of Canada 2
- United States 3
- United Kingdom 4
- Europe 5
- other (please specify) 6

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18. In what year were you born?

19 _ _

We are very interested in any further comments you may wish to make.
Your contribution to this project is extremely important.

Thank you very much for taking the time to fill out this questionnaire.
Please return it in the stamped, self-addressed envelope provided.

APPENDIX B

FREQUENCY DISTRIBUTIONS

QA1 Undergrad Medical Training> Prescribing

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Inadequate	1	46	5.5	5.8	5.8
Somewhat Inadequate	2	149	17.7	18.9	24.7
Neutral	3	136	16.2	17.2	41.9
Somewhat Adequate	4	287	34.1	36.3	78.2
Very Adequate	5	172	20.4	21.8	100.0
	.	52	6.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.494	MEDIAN	4.000	MODE	4.000
STD DEV	1.189	VARIANCE	1.414	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 790 MISSING CASES 52

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QA2 Postgrad Medical Training> Prescribing

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Inadequate	1	22	2.6	2.9	2.9
Somewhat Inadequate	2	77	9.1	10.2	13.1
Neutral	3	93	11.0	12.3	25.3
Somewhat Adequate	4	277	32.9	36.5	61.9
Very Adequate	5	289	34.3	38.1	100.0
	.	53	6.3	MISSING	
N.A.	8	31	3.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.968	MEDIAN	4.000	MODE	5.000
STD DEV	1.083	VARIANCE	1.172	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 758 MISSING CASES 84

QA3A Keep Up> Rate of Introduction> New Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	146	17.3	19.2	19.2
	2	191	22.7	25.1	44.3
	3	215	25.5	28.3	72.6
	4	164	19.5	21.6	94.2
Serious Problem	5	44	5.2	5.8	100.0
	.	82	9.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.696	MEDIAN	3.000	MODE	3.000
STD DEV	1.173	VARIANCE	1.377	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 760 MISSING CASES 82

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QA3B Keep Up Knowledge> Lack of Time

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	98	11.6	12.9	12.9
	2	140	16.6	18.4	31.3
	3	232	27.6	30.5	61.8
	4	193	22.9	25.4	87.2
Serious Problem	5	97	11.5	12.8	100.0
	.	82	9.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.067	MEDIAN	3.000	MODE	3.000
STD DEV	1.209	VARIANCE	1.462	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 760 MISSING CASES 82

QA3C Keep Up> Inadequate Sources of Info

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	198	23.5	26.1	26.1
	2	229	27.2	30.2	56.3
	3	197	23.4	26.0	82.3
	4	110	13.1	14.5	96.8
Serious Problem	5	24	2.9	3.2	100.0
	.	84	10.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.384	MEDIAN	2.000	MODE	2.000
STD DEV	1.114	VARIANCE	1.241	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 758 MISSING CASES 84

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QA3D Keep Up> Distrust Available Information

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	154	18.3	20.4	20.4
	2	162	19.2	21.5	41.9
	3	219	26.0	29.0	70.9
	4	169	20.1	22.4	93.2
Serious Problem	5	51	6.1	6.8	100.0
	.	87	10.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.736	MEDIAN	3.000	MODE	3.000
STD DEV	1.207	VARIANCE	1.457	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 755 MISSING CASES 87

QA3E Keep Up>Inability Critically Assess Info

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	172	20.4	22.8	22.8
	2	177	21.0	23.5	46.3
	3	216	25.7	28.6	74.9
	4	147	17.5	19.5	94.4
Serious Problem	5	42	5.0	5.6	100.0
	.	88	10.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.615	MEDIAN	3.000	MODE	3.000
STD DEV	1.191	VARIANCE	1.419	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 754 MISSING CASES 88

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QA3F Keep Up Knowledge> Lack of Interest

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	428	50.8	57.8	57.8
	2	193	22.9	26.0	83 8
	3	106	12.6	14.3	98.1
	4	14	1.7	1.9	100.0
	.	101	12.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.603	MEDIAN	1.000	MODE	1.000
STD DEV	.800	VARIANCE	.640	MINIMUM	1.000
MAXIMUM	4.000				

VALID CASES 741 MISSING CASES 101

QA3G Keep Up Knowledge re Drugs> Other Prob

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not A Problem	1	28	3.3	52.8	52.8
	2	1	.1	1.9	54.7
	3	5	.6	9.4	64.2
	4	11	1.3	20.8	84.9
Serious Problem	5	8	1.0	15.1	100.0
	.	789	93.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.434	MEDIAN	1.000	MODE	1.000
STD DEV	1.635	VARIANCE	2.673	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 53 MISSING CASES 789

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QA4A Current Level of Knowledge> Drug Costs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	132	15.7	17.1	17.1
Dissatisfied	2	345	41.0	44.8	61.9
Neutral	3	177	21.0	23.0	84.9
Satisfied	4	95	11.3	12.3	97.3
Very Satisfied	5	21	2.5	2.7	100.0
	.	72	8.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.387	MEDIAN	2.000	MODE	2.000
STD DEV	.996	VARIANCE	.992	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 770 MISSING CASES 72

QA4B Level of Knowledge> Drug Effectiveness

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	7	.8	.9	.9
Dissatisfied	2	72	8.6	9.4	10.4
Neutral	3	203	24.1	26.6	37.0
Satisfied	4	427	50.7	56.0	92.9
Very Satisfied	5	54	6.4	7.1	100.0
	.	79	9.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.588	MEDIAN	4.000	MODE	4.000
STD DEV	.793	VARIANCE	.628	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 763 MISSING CASES 79

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QA4D Knowledge>Equivalencies-Similar/Distinct

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	53	6.3	6.9	6.9
Dissatisfied	2	258	30.6	33.8	40.7
Neutral	3	265	31.5	34.7	75.4
Satisfied	4	167	19.8	21.9	97.3
Very Satisfied	5	21	2.5	2.7	100.0
	.	78	9.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.797	MEDIAN	3.000	MODE	3.000
STD DEV	.951	VARIANCE	.904	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 764 MISSING CASES 78

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QA4E Knowledge> Needs of Special Groups

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	37	4.4	4.9	4.9
Dissatisfied	2	197	23.4	26.2	31.1
Neutral	3	213	25.3	28.3	59.4
Satisfied	4	276	32.8	36.7	96.0
Very Satisfied	5	30	3.6	4.0	100.0
	.	89	10.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.086	MEDIAN	3.000	MODE	4.000
STD DEV	.989	VARIANCE	.978	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 753 MISSING CASES 89

QA4F Knowledge> Abuse of Prescription Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	52	6.2	6.9	6.9
Dissatisfied	2	152	18.1	20.1	27.0
Neutral	3	195	23.2	25.8	52.8
Satisfied	4	305	36.2	40.4	93.2
Very Satisfied	5	51	6.1	6.8	100.0
	.	87	10.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.200	MEDIAN	3.000	MODE	4.000
STD DEV	1.055	VARIANCE	1.112	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 755 MISSING CASES 87

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QA4H Knowledge> Non-Drug Alternative Therapy

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	41	4.9	5.6	5.6
Dissatisfied	2	181	21.5	24.5	30.1
Neutral	3	269	31.9	36.4	66.5
Satisfied	4	197	23.4	26.7	93.2
Very Satisfied	5	50	5.9	6.8	100.0
	.	104	12.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.046	MEDIAN	3.000	MODE	3.000
STD DEV	1.002	VARIANCE	1.005	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 738 MISSING CASES 104

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QA4I Current Level of Knowledge> Other Area

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Very Dissatisfied	1	1	.1	9.1	9.1
Dissatisfied	2	2	.2	18.2	27.3
Neutral	3	5	.6	45.5	72.7
Satisfied	4	2	.2	18.2	90.9
Very Satisfied	5	1	.1	9.1	100.0
	.	831	98.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.000	MEDIAN	3.000	MODE	3.000
STD DEV	1.095	VARIANCE	1.200	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 11 MISSING CASES 831

QA5A Info Source> Journal Articles

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	18	2.1	2.3	2.3
	2	71	8.4	9.2	11.5
	3	129	15.3	16.7	28.2
	4	269	31.9	34.8	63.1
Very Important	5	285	33.8	36.9	100.0
	.	70	8.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.948	MEDIAN	4.000	MODE	5.000
STD DEV	1.055	VARIANCE	1.113	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 772 MISSING CASES 70

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QA5B Info Source> Profesnl Meetings/Conventns

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	34	4.0	4.4	4.4
	2	63	7.5	8.2	12.6
	3	109	12.9	14.1	26.7
	4	314	37.3	40.7	67.4
Very Important	5	251	29.8	32.6	100.0
	.	71	8.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.888	MEDIAN	4.000	MODE	4.000
STD DEV	1.086	VARIANCE	1.180	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 771 MISSING CASES 71

QA5C Info Source> Pharmaceutical Seminars

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	142	16.9	18.5	18.5
	2	175	20.8	22.8	41.3
	3	261	31.0	34.0	75.4
	4	145	17.2	18.9	94.3
Very Important	5	44	5.2	5.7	100.0
	.	75	8.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.705	MEDIAN	3.000	MODE	3.000
STD DEV	1.141	VARIANCE	1.302	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 767 MISSING CASES 75

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QA5D Info Source> Rounds at Main Hospital

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	107	12.7	14.6	14.6
	2	105	12 5	14.3	28 9
	3	162	19.2	22.1	51.0
	4	263	31.2	35.8	86.8
Very Important	5	97	11.5	13.2	100.0
	.	108	12.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.188	MEDIAN	3.000	MODE	4.000
STD DEV	1.257	VARIANCE	1.580	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 734 MISSING CASES 108

QA5E Info Source> Adverts, Promotional Lit.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	200	23.8	26.0	26.0
	2	271	32.2	35.3	61.3
	3	205	24.3	26.7	88.0
	4	79	9.4	10.3	98.3
Very Important	5	13	1.5	1.7	100.0
	.	74	8.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.263	MEDIAN	2.000	MODE	2.000
STD DEV	1.012	VARIANCE	1.023	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 768 MISSING CASES 74

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QA5F Info Source> Continuing Med Ed Courses

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	44	5.2	5.8	5.8
	2	72	8.6	9.4	15.2
	3	159	18.9	20.8	36.0
	4	319	37.9	41.8	77.7
Very Important	5	170	20.2	22.3	100.0
	.	78	9.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.653	MEDIAN	4.000	MODE	4.000
STD DEV	1.099	VARIANCE	1.207	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 764 MISSING CASES 78

QA5G Info Source> Pharmaceutical Company Reps

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	207	24.6	27.2	27.2
	2	202	24.0	26.5	53.7
	3	210	24.9	27.6	81.3
	4	119	14.1	15.6	97.0
Very Important	5	23	2.7	3.0	100.0
	.	81	9.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.497	MEDIAN	2.000	MODE	3.000
STD DEV	1.132	VARIANCE	1.281	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 761 MISSING CASES 81

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QA5H Info Source> Consultation-Oth Physicians

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	15	1.8	1.9	1.9
	2	51	6.1	6.6	8 6
	3	181	21.5	23.5	32.0
	4	378	44.9	49.0	81.1
Very Important	5	146	17.3	18.9	100.0
	.	71	8.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.764	MEDIAN	4.000	MODE	4.000
STD DEV	.900	VARIANCE	.809	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 771 MISSING CASES 71

QA5I Info Source> Clinical Pharmacists

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	166	19.7	22.0	22.0
	2	145	17.2	19.3	41.3
	3	182	21.6	24.2	65.5
	4	181	21.5	24.0	89.5
Very Important	5	79	9.4	10.5	100.0
	.	89	10.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.817	MEDIAN	3.000	MODE	3.000
STD DEV	1.305	VARIANCE	1.703	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 753 MISSING CASES 89

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QA5J Info Source> Ontario Drug Benefit Plan

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	366	43.5	48.9	48.9
	2	200	23.8	26.7	75.6
	3	115	13.7	15.4	90.9
	4	47	5.6	6.3	97.2
Very Important	5	21	2.5	2.8	100.0
	.	93	11.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.874	MEDIAN	2.000	MODE	1.000
STD DEV	1.064	VARIANCE	1.131	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 749 MISSING CASES 93

QA5K Info Source> Other Source Drug Info

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	4	.5	6.5	6.5
	2	1	.1	1.6	8.1
	3	5	.6	8.1	16.1
	4	22	2.6	35.5	51.6
Very Important	5	30	3.6	48.4	100.0
	.	780	92.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.177	MEDIAN	4.000	MODE	5.000
STD DEV	1.094	VARIANCE	1.198	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 62 MISSING CASES 780

QB1 # of Patient-Visits in a Typical Week

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	6	1	1	37	1	0	20	120	55	8	71
1	1	0	1	38	2	0	21	125	22	3	74
4	1	0	1	40	30	4	25	130	9	1	76
5	3	0	2	43	3	0	25	135	3	0	76
6	1	0	2	44	1	0	25	140	11	2	78
7	1	0	2	45	6	1	26	150	51	7	85
8	3	0	2	50	51	7	33	160	11	2	86
9	1	0	2	53	1	0	33	165	1	0	86
10	10	1	4	55	3	0	34	170	3	0	87
11	1	0	4	58	1	0	34	175	10	1	88
12	4	1	4	60	33	5	38	180	14	2	90
13	1	0	5	62	1	0	39	185	1	0	90
15	8	1	6	65	7	1	40	190	1	0	90
16	4	1	6	70	15	2	42	200	39	5	96
20	33	5	11	75	21	3	45	220	5	1	97
21	1	0	11	80	27	4	48	225	1	0	97
25	13	2	13	85	3	0	49	240	1	0	97
26	1	0	13	90	10	1	50	250	15	2	99
27	1	0	13	95	2	0	50	280	1	0	99
30	38	5	18	100	84	12	62	300	4	1	100
33	2	0	19	101	1	0	62	350	1	0	100
35	10	1	20	104	1	0	62	355	1	0	100
36	1	0	20	110	10	1	64	400	1	0	100

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	122				

MEAN	95.669	MEDIAN	90.000	MODE	100.000
STD DEV	64.036	VARIANCE	4100.600	MINIMUM	.000
MAXIMUM	400.000				

VALID CASES 720 MISSING CASES 122

Q82 # Prescriptions/Renewals Write in Week

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	18	3	3	28	1	0	44	100	45	6	90
1	22	3	6	30	56	8	52	101	1	0	90
2	11	2	7	32	2	0	52	105	1	0	90
3	14	2	9	35	7	1	53	110	2	0	90
4	2	0	9	40	31	4	58	120	7	1	91
5	19	3	12	41	1	0	58	125	3	0	92
6	10	1	14	45	6	1	59	130	1	0	92
7	3	0	14	50	66	9	68	135	1	0	92
8	12	2	16	55	2	0	68	140	1	0	92
10	52	7	23	60	30	4	73	145	1	0	92
12	3	0	23	63	1	0	73	150	17	2	95
13	5	1	24	65	1	0	73	200	17	2	97
14	3	0	25	70	14	2	75	225	1	0	97
15	34	5	29	75	24	3	78	250	9	1	98
18	3	0	30	80	26	4	82	300	5	1	99
20	51	7	37	85	2	0	82	400	3	0	100
23	2	0	37	87	1	0	82	500	2	0	100
25	47	7	44	88	1	0	82	999	1	0	100
26	1	0	44	90	6	1	83				

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	134				

MEAN	54.133	MEDIAN	30.000	MODE	50.000
STD DEV	72.125	VARIANCE	5201.980	MINIMUM	.000
MAXIMUM	999.000				

VALID CASES	708	MISSING CASES	134

QB3 % of Prescriptions for Generic Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	83	9.9	11.9	11.9
	1	2	.2	.3	12.1
	2	5	.6	.7	12.9
	5	8	1.0	1.1	14.0
	10	57	6.8	8.1	22.1
	15	6	.7	.9	23.0
	20	26	3.1	3.7	26.7
	25	24	2.9	3.4	30.1
	30	21	2.5	3.0	33.1
	33	2	.2	.3	33.4
	40	19	2.3	2.7	36.1
	45	2	.2	.3	36.4
	50	146	17.3	20.9	57.3
	55	1	.1	.1	57.4
	60	22	2.6	3.1	60.6
	65	1	.1	.1	60.7
	70	23	2.7	3.3	64.0
	75	41	4.9	5.9	69.9
	78	1	.1	.1	70.0
	80	51	6.1	7.3	77.3
	85	3	.4	.4	77.7
	90	65	7.7	9.3	87.0
	95	22	2.6	3.1	90.1
	98	2	.2	.3	90.4
	99	6	.7	.9	91.3
	100	61	7.2	8.7	100.0
	.	142	16.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	51.494	MEDIAN	50.000	MODE	50.000
STD DEV	33.704	VARIANCE	1135.958	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 700 MISSING CASES 142

QB4 Compared 5 Yrs Ago, Prescriptions Write

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Many Fewer	1	29	3.4	4.6	4.6
Fewer	2	100	11.9	15.9	20.6
About Same	3	399	47.4	63.6	84.2
More	4	86	10.2	13.7	97.9
Many More	5	13	1.5	2.1	100.0
	.	215	25.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.927	MEDIAN	3.000	MODE	3.000
STD DEV	.748	VARIANCE	.560	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 627 MISSING CASES 215

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QB5 Elderly=Ont.Drug Benefits=More Prescribe

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Almost Never	1	108	12.8	17.1	17.1
Infrequently	2	145	17.2	23.0	40.1
Some of Time	3	187	22.2	29.6	69.7
Frequently	4	144	17.1	22.8	92.6
Almost Always	5	47	5.6	7.4	100.0
	.	211	25.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.805	MEDIAN	3.000	MODE	3.000
STD DEV	1.185	VARIANCE	1.405	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 631 MISSING CASES 211

QB6A Influence> Patient's Economic Situation

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	90	10.7	12.7	12.7
	2	69	8.2	9.8	22.5
	3	134	16.2	19.2	41.7
	4	254	30.2	35.9	77.7
Very Important	5	158	18.8	22.3	100.0
	.	135	16.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.454	MEDIAN	4.000	MODE	4.000
STD DEV	1.287	VARIANCE	1.656	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 707 MISSING CASES 135

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QB6B Influence> Enrolment in a Drug Plan

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	123	14.6	17.4	17.4
	2	68	8.1	9.6	27.1
	3	156	18.5	22.1	49.2
	4	232	27.6	32.9	82.1
Very Important	5	126	15.0	17.9	100.0
	.	137	16.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.241	MEDIAN	4.000	MODE	4.000
STD DEV	1.335	VARIANCE	1.783	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 705 MISSING CASES 137

QB6C Influence> the Cost of a Drug

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	67	8.0	9.4	9.4
	2	62	7.4	8.7	18.2
	3	172	20.4	24.3	42.5
	4	280	33.3	39.5	81.9
Very Important	5	128	15.2	18.1	100.0
	.	133	15.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.480	MEDIAN	4.000	MODE	4.000
STD DEV	1.164	VARIANCE	1.354	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 709 MISSING CASES 133

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QB6D Influence> Pressures from Patients

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	250	29.7	35.4	35.4
	2	224	26.6	31.7	67.0
	3	151	17.9	21.4	88.4
	4	68	8.1	9.6	98.0
Very Important	5	14	1.7	2.0	100.0
	.	135	16.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.112	MEDIAN	2.000	MODE	1.000
STD DEV	1.058	VARIANCE	1.119	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 707 MISSING CASES 135

QB6E Influence> the Need to Do Something

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	340	40.4	48.4	48.4
	2	199	23.6	28.3	76.8
	3	116	13.8	16.5	93.3
	4	45	5.3	6.4	99.7
Very Important	5	2	.2	.3	100.0
	.	140	16.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.818	MEDIAN	2.000	MODE	1.000
STD DEV	.949	VARIANCE	.900	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 702 MISSING CASES 140

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QB6F Influence> Peer Influence

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	344	40.9	49.1	49.1
	2	189	22.4	27.0	76.0
	3	127	15.1	18.1	94.2
	4	34	4.0	4.9	99.0
Very Important	5	7	.8	1.0	100.0
	.	141	16.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.817	MEDIAN	2.000	MODE	1.000
STD DEV	.961	VARIANCE	.924	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 701 MISSING CASES 141

QB6G Influence> Info from Drug Companies

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	312	37.1	44.3	44.3
	2	241	28.6	34.2	78.4
	3	121	14.4	17.2	95.6
	4	29	3.4	4.1	99.7
Very Important	5	2	.2	.3	100.0
	.	137	16.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.820	MEDIAN	2.000	MODE	1.000
STD DEV	.879	VARIANCE	.773	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 705 MISSING CASES 137

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QB6H Influence> Practice Defensive Medicine

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	289	34.3	41.3	41.3
	2	151	17.9	21.6	62.9
	3	153	18.2	21.9	84.7
	4	81	9.6	11.6	96.3
Very Important	5	26	3.1	3.7	100.0
	.	142	16.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.149	MEDIAN	2.000	MODE	1.000
STD DEV	1.187	VARIANCE	1.409	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 700 MISSING CASES 142

QB6I Influence> Other in Prescribing Decision

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	4	.5	26.7	26.7
	2	1	.1	6.7	33.3
	3	2	.2	13.3	46.7
	4	4	.5	26.7	73.3
Very Important	5	4	.5	26.7	100.0
	.	827	98.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.200	MEDIAN	4.000	MODE	1.000
STD DEV	1.612	VARIANCE	2.600	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 15 MISSING CASES 827

QB7A Patient Asks For Drug-Not Discuss Prob

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	265	31.5	39.4	39.4
	1	145	17.2	21.5	60.9
	2	73	8.7	10.8	71.8
	3	37	4.4	5.5	77.3
	4	13	1.5	1.9	79.2
	5	66	7.8	9.8	89.0
	6	8	1.0	1.2	90.2
	7	3	.4	.4	90.6
	8	2	.2	.3	90.9
	9	1	.1	.1	91.1
	10	43	5.1	6.4	97.5
	15	4	.5	.6	98.1
	17	1	.1	.1	98.2
	20	6	.7	.9	99.1
	25	3	.4	.4	99.6
	30	2	.2	.3	99.9
	50	1	.1	.1	100.0
	.	169	20.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.511	MEDIAN	1.000	MODE	.000
STD DEV	4.414	VARIANCE	19.482	MINIMUM	.000
MAXIMUM	50.000				

VALID CASES 673 MISSING CASES 169

Q87B Counsel Patient Reduce/Not Take a Drug

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	55	6.5	8.3	8.3
	1	105	12.5	15.9	24.2
	2	93	11.0	14.0	38.2
	3	53	6.3	8.0	46.2
	4	30	3.6	4.5	50.8
	5	128	15.2	19.3	70.1
	6	13	1.5	2.0	72.1
	7	4	.5	.6	72.7
	8	9	1.1	1.4	74.0
	9	3	.4	.5	74.5
	10	87	10.3	13.1	87.6
	12	4	.5	.6	88.2
	13	4	.5	.6	88.8
	14	1	.1	.2	89.0
	15	17	2.0	2.6	91.5
	18	1	.1	.2	91.7
	20	30	3.6	4.5	96.2
	24	1	.1	.2	96.4
	25	7	.8	1.1	97.4
	30	7	.8	1.1	98.5
	35	1	.1	.2	98.6
	40	4	.5	.6	99.2
	50	5	.6	.8	100.0
	.	180	21.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	6.233	MEDIAN	4.000	MODE	5.000
STD DEV	7.590	VARIANCE	57.601	MINIMUM	.000
MAXIMUM	50.000				

VALID CASES 662 MISSING CASES 180

QB7C Prescription Even If Not Necessary

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	335	39.8	51.1	51.1
	1	89	10.6	13.6	64.7
	2	62	7.4	9.5	74.2
	3	26	3.1	4.0	78.2
	4	7	.8	1.1	79.2
	5	65	7.7	9.9	89.2
	6	4	.5	.6	89.8
	8	4	.5	.6	90.4
	10	33	3.9	5.0	95.4
	13	1	.1	.2	95.6
	15	10	1.2	1.5	97.1
	20	14	1.7	2.1	99.2
	25	1	.1	.2	99.4
	30	2	.2	.3	99.7
	50	2	.2	.3	100.0
	.	187	22.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.531	MEDIAN	.000	MODE	.000
STD DEV	5.137	VARIANCE	26.384	MINIMUM	.000
MAXIMUM	50.000				

VALID CASES 655 MISSING CASES 187

QB7D Review/Discuss With Patient Drug Taking

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	22	3	3	20	83	13	68	70	2	0	92
1	33	5	9	23	1	0	68	75	4	1	93
2	39	6	15	24	1	0	68	80	9	1	94
3	20	3	18	25	32	5	73	90	1	0	94
4	13	2	20	26	1	0	73	100	18	3	97
5	52	8	28	30	32	5	78	110	1	0	97
6	7	1	29	35	5	1	79	120	4	1	98
7	3	0	29	40	22	3	83	125	1	0	98
8	6	1	30	45	2	0	83	150	4	1	99
10	107	17	47	48	1	0	83	175	1	0	99
12	4	1	47	50	39	6	89	178	1	0	99
13	4	1	48	55	3	0	89	180	1	0	99
14	1	0	48	60	14	2	92	200	3	0	100
15	41	6	54	63	1	0	92	250	1	0	100
18	4	1	55	65	1	0	92	300	1	0	100

M I S S I N G D A T A

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	196				

MEAN	25.204	MEDIAN	15.000	MODE	10.000
STD DEV	33.691	VARIANCE	1135.062	MINIMUM	.000
MAXIMUM	300.000				

VALID CASES 646 MISSING CASES 196

Q88 % High Serum Cholesterol=Nicotinic Acid

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	433	51.4	90.4	90.4
	1	10	1.2	2.1	92.5
	2	4	.5	.8	93.3
	5	15	1.8	3.1	96.5
	10	12	1.4	2.5	99.0
	15	2	.2	.4	99.4
	35	1	.1	.2	99.6
	50	1	.1	.2	99.8
	100	1	.1	.2	100.0
	.	363	43.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	.894	MEDIAN	.000	MODE	.000
STD DEV	5.675	VARIANCE	32.204	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 479 MISSING CASES 363

QB9MED % High Serum & 65plus=Prescription Med.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	226	26.8	52.0	52.0
	1	20	2.4	4.6	56.6
	2	14	1.7	3.2	59.8
	3	2	.2	.5	60.2
	5	52	6.2	12.0	72.2
	6	1	.1	.2	72.4
	7	1	.1	.2	72.6
	8	1	.1	.2	72.9
	10	65	7.7	14.9	87.8
	13	1	.1	.2	88.0
	15	4	.5	.9	89.0
	18	1	.1	.2	89.2
	20	14	1.7	3.2	92.4
	25	3	.4	.7	93.1
	30	5	.6	1.1	94.3
	35	1	.1	.2	94.5
	40	4	.5	.9	95.4
	50	10	1.2	2.3	97.7
	60	1	.1	.2	97.9
	70	2	.2	.5	98.4
	75	4	.5	.9	99.3
	80	1	.1	.2	99.5
	100	2	.2	.5	100.0
	.	407	48.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	7.025	MEDIAN	.000	MODE	.000
STD DEV	14.785	VARIANCE	218.587	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 435 MISSING CASES 407

QB9DIET % High Serum & 65plus=Diet,Weight Reduce

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	52	6.2	11.5	11.5
	1	1	.1	.2	11.7
	5	4	.5	.9	12.6
	10	5	.6	1.1	13.7
	20	1	.1	.2	13.9
	23	1	.1	.2	14.1
	25	7	.8	1.5	15.7
	30	2	.2	.4	16.1
	40	2	.2	.4	16.6
	50	15	1.8	3.3	19.9
	51	1	.1	.2	20.1
	60	3	.4	.7	20.8
	65	2	.2	.4	21.2
	70	3	.4	.7	21.9
	75	8	1.0	1.8	23.6
	80	14	1.7	3.1	26.7
	85	3	.4	.7	27.4
	88	1	.1	.2	27.6
	90	50	5.9	11.0	38.6
	94	1	.1	.2	38.9
	95	30	3.6	6.6	45.5
	96	1	.1	.2	45.7
	98	6	.7	1.3	47.0
	99	8	1.0	1.8	48.8
	100	230	27.3	50.8	99.6
	150	1	.1	.2	99.8
	160	1	.1	.2	100.0
	.	389	46.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	79.565	MEDIAN	100.000	MODE	100.000
STD DEV	35.172	VARIANCE	1237.043	MINIMUM	.000
MAXIMUM	160.000				

VALID CASES 453 MISSING CASES 389

QB10 % Drugs Not Produce Results=Their Cost

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	50	5.9	9.8	9.8
	1	3	.4	.6	10.4
	2	4	.5	.8	11.2
	3	1	.1	.2	11.4
	5	29	3.4	5.7	17.1
	7	1	.1	.2	17.3
	8	1	.1	.2	17.5
	10	93	11.0	18.3	35.8
	15	14	1.7	2.8	38.5
	20	70	8.3	13.8	52.3
	25	55	6.5	10.8	63.1
	30	49	5.8	9.6	72.7
	33	2	.2	.4	73.1
	35	5	.6	1.0	74.1
	40	12	1.4	2.4	76.4
	50	82	9.7	16.1	92.5
	60	11	1.3	2.2	94.7
	70	6	.7	1.2	95.9
	75	11	1.3	2.2	98.0
	80	3	.4	.6	98.6
	85	1	.1	.2	98.8
	90	5	.6	1.0	99.8
	100	1	.1	.2	100.0
	.	333	39.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	25.855	MEDIAN	20.000	MODE	10.000
STD DEV	20.803	VARIANCE	432.770	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 509 MISSING CASES 333

QB11A Drug Seminars Sponsored by Phys. Groups

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	242	28.7	34.8	34.8
	1	81	9.6	11.6	46.4
	2	127	15.1	18.2	64.7
	3	53	6.3	7.6	72.3
	4	62	7.4	8.9	81.2
	5	34	4.0	4.9	86.1
	6	25	3.0	3.6	89.7
	7	5	.6	.7	90.4
	8	7	.8	1.0	91.4
	10	24	2.9	3.4	94.8
	12	5	.6	.7	95.5
	15	7	.8	1.0	96.6
	16	2	.2	.3	96.8
	18	1	.1	.1	97.0
	20	15	1.8	2.2	99.1
	24	1	.1	.1	99.3
	25	1	.1	.1	99.4
	30	1	.1	.1	99.6
	40	2	.2	.3	99.9
	50	1	.1	.1	100.0
	.	146	17.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.042	MEDIAN	2.000	MODE	.000
STD DEV	5.003	VARIANCE	25.027	MINIMUM	.000
MAXIMUM	50.000				

VALID CASES 696 MISSING CASES 146

QB11B CME Course on Prescription Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	320	38.0	46.9	46.9
	1	120	14.3	17.6	64.5
	2	118	14.0	17.3	81.8
	3	35	4.2	5.1	87.0
	4	37	4.4	5.4	92.4
	5	15	1.8	2.2	94.6
	6	5	.6	.7	95.3
	7	1	.1	.1	95.5
	8	3	.4	.4	95.9
	10	11	1.3	1.6	97.5
	12	3	.4	.4	97.9
	15	1	.1	.1	98.1
	16	2	.2	.3	98.4
	20	5	.6	.7	99.1
	25	1	.1	.1	99.3
	30	1	.1	.1	99.4
	40	1	.1	.1	99.6
	50	3	.4	.4	100.0
	.	160	19.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.887	MEDIAN	1.000	MODE	.000
STD DEV	4.677	VARIANCE	21.874	MINIMUM	.000
MAXIMUM	50.000				

VALID CASES 682 MISSING CASES 160

QB11C Prescribing Practices Reviewed-College

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	666	79.1	97.7	97.7
	1	12	1.4	1.8	99.4
	2	2	.2	.3	99.7
	3	1	.1	.1	99.9
	40	1	.1	.1	100.0
	.	160	19.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	.087	MEDIAN	.000	MODE	.000
STD DEV	1.544	VARIANCE	2.385	MINIMUM	.000
MAXIMUM	40.000				

VALID CASES 682 MISSING CASES 160

QB11D Hospital-Based Clinical Drug Trial

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	510	60.6	74.6	74.6
	1	73	8.7	10.7	85.2
	2	45	5.3	6.6	91.8
	3	20	2.4	2.9	94.7
	4	11	1.3	1.6	96.3
	5	8	1.0	1.2	97.5
	6	3	.4	.4	98.0
	10	7	.8	1.0	99.0
	15	1	.1	.1	99.1
	20	1	.1	.1	99.3
	25	1	.1	.1	99.4
	30	1	.1	.1	99.6
	48	1	.1	.1	99.7
	50	1	.1	.1	99.9
	55	1	.1	.1	100.0
	.	158	18.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	.933	MEDIAN	.000	MODE	.000
STD DEV	4.013	VARIANCE	16.107	MINIMUM	.000
MAXIMUM	55.000				

VALID CASES 684 MISSING CASES 158

Q81IE Called by Pharmacist re Drug Profiles

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	344	40.9	50.4	50.4
	1	57	6.8	8.3	58.7
	2	76	9.0	11.1	69.8
	3	28	3.3	4.1	73.9
	4	22	2.6	3.2	77.2
	5	36	4.3	5.3	82.4
	6	16	1.9	2.3	84.8
	7	1	.1	.1	84.9
	8	4	.5	.6	85.5
	9	1	.1	.1	85.7
	10	48	5.7	7.0	92.7
	12	5	.6	.7	93.4
	13	3	.4	.4	93.9
	15	1	.1	.1	94.0
	20	14	1.7	2.0	96.0
	24	3	.4	.4	96.5
	25	4	.5	.6	97.1
	30	4	.5	.6	97.7
	40	4	.5	.6	98.2
	45	1	.1	.1	98.4
	50	6	.7	.9	99.3
	70	1	.1	.1	99.4
	100	3	.4	.4	99.9
	150	1	.1	.1	100.0
	.	159	18.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.240	MEDIAN	.000	MODE	.000
STD DEV	11.555	VARIANCE	133.508	MINIMUM	.000
MAXIMUM	150.000				

VALID CASES 683 MISSING CASES 159

QB12A Visited by Pharmaceutical Company Rep

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	69	10	10	24	12	2	55	125	3	0	90
1	20	3	13	25	16	2	57	130	1	0	90
2	29	4	17	26	1	0	57	150	8	1	91
3	11	2	19	30	42	6	63	160	2	0	92
4	17	2	21	35	2	0	64	165	1	0	92
5	33	5	26	40	20	3	67	175	1	0	92
6	19	3	29	48	3	0	67	180	2	0	92
7	1	0	29	50	48	7	74	200	32	5	97
8	7	1	30	60	10	1	75	240	1	0	97
9	3	0	31	66	1	0	76	250	8	1	98
10	56	8	39	70	6	1	77	300	2	0	99
11	2	0	39	72	1	0	77	350	1	0	99
12	18	3	42	75	8	1	78	360	1	0	99
14	1	0	42	80	10	1	79	400	4	1	99
15	9	1	43	85	1	0	79	430	1	0	100
17	1	0	43	90	1	0	80	450	1	0	100
18	1	0	44	98	1	0	80	700	1	0	100
20	62	9	53	100	64	9	89	999	1	0	100
22	1	0	53	120	3	0	90				

M I S S I N G D A T A

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	161				

MEAN	50.844	MEDIAN	20.000	MODE	.000
STD DEV	82.162	VARIANCE	6750.540	MINIMUM	.000
MAXIMUM	999.000				

VALID CASES 681 MISSING CASES 161

QB12B Seminar Sponsored by Pharmaceutical Co.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	128	15.2	18.2	18.2
	1	91	10.8	12.9	31.2
	2	121	14.4	17.2	48.4
	3	48	5.7	6.8	55.2
	4	51	6.1	7.3	62.4
	5	61	7.2	8.7	71.1
	6	48	5.7	6.8	78.0
	7	1	.1	.1	78.1
	8	15	1.8	2.1	80.2
	9	4	.5	.6	80.8
	10	69	8.2	9.8	90.6
	12	10	1.2	1.4	92.0
	13	3	.4	.4	92.5
	14	1	.1	.1	92.6
	15	9	1.1	1.3	93.9
	20	21	2.5	3.0	96.9
	24	8	1.0	1.1	98.0
	30	7	.8	1.0	99.0
	36	1	.1	.1	99.1
	40	2	.2	.3	99.4
	50	2	.2	.3	99.7
	60	1	.1	.1	99.9
	150	1	.1	.1	100.0
	.	139	16.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	5.239	MEDIAN	3.000	MODE	.000
STD DEV	8.696	VARIANCE	75.621	MINIMUM	.000
MAXIMUM	150.000				

VALID CASES 703 MISSING CASES 139

Q812C Drug Co. Survey re Prescribing Patterns

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	372	44.2	55.6	55.6
	1	38	4.5	5.7	61.3
	2	68	8.1	10.2	71.4
	3	32	3.8	4.8	76.2
	4	27	3.2	4.0	80.3
	5	44	5.2	6.6	86.8
	6	19	2.3	2.8	89.7
	7	3	.4	.4	90.1
	8	10	1.2	1.5	91.6
	10	32	3.8	4.8	96.4
	12	4	.5	.6	97.0
	15	5	.6	.7	97.8
	20	8	1.0	1.2	99.0
	24	2	.2	.3	99.3
	30	2	.2	.3	99.6
	40	1	.1	.1	99.7
	50	2	.2	.3	100.0
	.	173	20.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.487	MEDIAN	.000	MODE	.000
STD DEV	5.062	VARIANCE	25.621	MINIMUM	.000
MAXIMUM	50.000				

VALID CASES 669 MISSING CASES 173

QB12D Drug Trial Sponsored by Pharmaceutical

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Occasions	0	487	57.8	70.9	70.9
	1	117	13.9	17.0	87.9
	2	41	4.9	6.0	93.9
	3	16	1.9	2.3	96.2
	4	10	1.2	1.5	97.7
	5	11	1.3	1.6	99.3
	10	3	.4	.4	99.7
	15	1	.1	.1	99.9
	16	1	.1	.1	100.0
	.	155	18.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	.587	MEDIAN	.000	MODE	.000
STD DEV	1.431	VARIANCE	2.048	MINIMUM	.000
MAXIMUM	16.000				

VALID CASES 687 MISSING CASES 155

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QB13 Restrictions on Visits by Detail Men

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No Restrictions	1	238	28.3	34.4	34.4
No Visits Permit	2	100	11.9	14.5	48.8
Some Restrictions	3	354	42.0	51.2	100.0
	.	150	17.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.168	MEDIAN	3.000	MODE	3.000
STD DEV	.910	VARIANCE	.829	MINIMUM	1.000
MAXIMUM	3.000				

VALID CASES 692 MISSING CASES 150

QB14A Accepted From P.C. Reps> Meals

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	309	36.7	43.0	43.0
Yes	2	409	48.6	57.0	100.0
	.	124	14.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.570	MEDIAN	2.000	MODE	2.000
STD DEV	.495	VARIANCE	.245	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 718 MISSING CASES 124

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QB14B Accepted From P.C. Reps> Conference Fees

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	635	75.4	89.8	89.8
Yes	2	72	8.6	10.2	100.0
	.	135	16.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.102	MEDIAN	1.000	MODE	1.000
STD DEV	.303	VARIANCE	.092	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 707 MISSING CASES 135

QB14C Accepted From P.C. Reps> Stationery

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	375	44.5	52.3	52.3
Yes	2	342	40.6	47.7	100.0
	.	125	14.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.477	MEDIAN	1.000	MODE	1.000
STD DEV	.500	VARIANCE	.250	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 717 MISSING CASES 125

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QB14D Accepted From P.C. Reps> Travel Expenses

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	654	77.7	92.9	92.9
Yes	2	50	5.9	7.1	100.0
	.	138	16.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.071	MEDIAN	1.000	MODE	1.000
STD DEV	.257	VARIANCE	.066	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 704 MISSING CASES 138

QB14E Accepted From P.C. Reps> Office Services

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	694	82.4	98.3	98.3
Yes	2	12	1.4	1.7	100.0
	.	136	16.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.017	MEDIAN	1.000	MODE	1.000
STD DEV	.129	VARIANCE	.017	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 706 MISSING CASES 136

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QB14F Accepted From P.C. Reps> Computer Ware

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	687	81.6	97.4	97.4
Yes	2	18	2.1	2.6	100.0
	.	137	16.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.026	MEDIAN	1.000	MODE	1.000
STD DEV	.158	VARIANCE	.025	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 705 MISSING CASES 137

QB14G Accepted From P.C Reps> Other

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	280	33.3	72.7	72.7
Yes	2	105	12.5	27.3	100.0
	.	457	54.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.273	MEDIAN	1.000	MODE	1.000
STD DEV	.446	VARIANCE	.199	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 385 MISSING CASES 457

QC1 % Total Hlth Care $ Spent>Prescipt Drug

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	6	.7	.9	.9
	2	10	1.2	1.5	2.4
	3	4	.5	.6	3.0
	4	8	1.0	1.2	4.3
	5	48	5.7	7.3	11.6
	6	3	.4	.5	12.0
	7	6	.7	.9	12.9
	8	14	1.7	2.1	15.0
	10	119	14.1	18.1	33.1
	11	1	.1	.2	33.3
	12	6	.7	.9	34.2
	13	2	.2	.3	34.5
	15	91	10.8	13.8	48.3
	16	1	.1	.2	48.5
	17	4	.5	.6	49.1
	18	4	.5	.6	49.7
	20	102	12.1	15.5	65.2
	22	1	.1	.2	65.3
	25	53	6.3	8.1	73.4
	26	1	.1	.2	73.6
	27	1	.1	.2	73.7
	28	1	.1	.2	73.9
	30	80	9.5	12.2	86.0
	33	3	.4	.5	86.5
	35	14	1.7	2.1	88.6
	40	28	3.3	4.3	92.9
	45	3	.4	.5	93.3
	50	19	2.3	2.9	96.2
	57	1	.1	.2	96.4
	58	1	.1	.2	96.5
	60	10	1.2	1.5	98.0
	65	3	.4	.5	98.5
	70	3	.4	.5	98.9
	75	2	.2	.3	99.2
	80	5	.6	.8	100.0
	.	184	21.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	20.720	MEDIAN	20.000	MODE	10.000
STD DEV	14.453	VARIANCE	208.898	MINIMUM	1.000
MAXIMUM	80.000				

VALID CASES 658 MISSING CASES 184

QC2 $ Spent Health Care Had Positive Impact

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disagree	1	36	4.3	4.7	4.7
Disagree	2	142	16.9	18.4	23.0
Neutral	3	219	26.0	28.3	51.4
Agree	4	311	36.9	40.2	91.6
Strongly Agree	5	65	7.7	8.4	100.0
	.	69	8.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.294	MEDIAN	3.000	MODE	4.000
STD DEV	1.012	VARIANCE	1.024	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 773 MISSING CASES 69

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QC3 Emphasis Placed on Presciption Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Much Too Little	1	6	.7	.8	.8
Too Little	2	42	5.0	5.5	6.3
Right Amount	3	294	34.9	38.3	44.6
Too Much	4	392	46.6	51.1	95.7
Much Too Much	5	33	3.9	4.3	100.0
	.	75	8.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.527	MEDIAN	4.000	MODE	4.000
STD DEV	.702	VARIANCE	.492	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 767 MISSING CASES 75

QC4A Increased Costs> an Aging Population

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	7	.8	.9	.9
	2	20	2.4	2.6	3.5
	3	73	8.7	9.4	12.9
	4	349	41.4	45.0	57.9
Very Important	5	326	38.7	42.1	100.0
	.	67	8.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.248	MEDIAN	4.000	MODE	4.000
STD DEV	.799	VARIANCE	.639	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 775 MISSING CASES 67

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QC4C Increased Costs> Drug Company Profits

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	62	7.4	8.2	8.2
	2	124	14.7	16.4	24.6
	3	264	31.4	34.9	59.4
	4	191	22.7	25.2	84.7
Very Important	5	116	13.8	15.3	100.0
	.	85	10.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.231	MEDIAN	3.000	MODE	3.000
STD DEV	1.142	VARIANCE	1.305	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 757 MISSING CASES 85

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QC4D Increased Costs> Too Little Preventive

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	84	10.0	10.9	10.9
	2	140	16.6	18.1	29.0
	3	214	25.4	27.7	56.7
	4	210	24.9	27.2	83.8
Very Important	5	125	14.8	16.2	100.0
	.	69	8.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.197	MEDIAN	3.000	MODE	3.000
STD DEV	1.224	VARIANCE	1.498	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 773 MISSING CASES 69

QC4E Increased Costs> Public Enrolment- Plans

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	19	2.3	2.5	2.5
	2	102	12.1	13.4	15.9
	3	244	29.0	32.1	48.0
	4	256	30.4	33.7	81.7
Very Important	5	139	16.5	18.3	100.0
	.	82	9.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.518	MEDIAN	4.000	MODE	4.000
STD DEV	1.017	VARIANCE	1.035	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 760 MISSING CASES 82

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QC4F Increased Costs> Dispensing Fees

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	93	11.0	12.2	12.2
	2	166	19.7	21.8	34.1
	3	260	30.9	34.2	68.3
	4	151	17.9	19.9	88.2
Very Important	5	90	10.7	11.8	100.0
	.	82	9.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.972	MEDIAN	3.000	MODE	3.000
STD DEV	1.175	VARIANCE	1.381	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 760 MISSING CASES 82

QC4G Increased Costs> Hi Tech Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	32	3.8	4.3	4.3
	2	91	10.8	12.1	16.4
	3	211	25.1	28.1	44.5
	4	294	34.9	39.2	83.7
Very Important	5	122	14.5	16.3	100.0
	.	92	10.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.511	MEDIAN	4.000	MODE	4.000
STD DEV	1.037	VARIANCE	1.075	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 750 MISSING CASES 92

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QC4H Increased Costs> Lack Info Non-Drug Ther

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	106	12.6	14.0	14.0
	2	186	22.1	24.5	38.5
	3	212	25.2	27.9	66.4
	4	178	21.1	23.5	89.9
Very Important	5	77	9.1	10.1	100.0
	.	83	9.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.913	MEDIAN	3.000	MODE	3.000
STD DEV	1.199	VARIANCE	1.438	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 759 MISSING CASES 83

QC4I Increased Costs> Lack Personal Responsib

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	44	5.2	5.8	5.8
	2	104	12.4	13.7	19.5
	3	159	18.9	20.9	40.4
	4	239	28.4	31.4	71.8
Very Important	5	214	25.4	28.2	100.0
	.	82	9.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.625	MEDIAN	4.000	MODE	4.000
STD DEV	1.192	VARIANCE	1.420	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 760 MISSING CASES 82

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QC4J Increased Costs> Other Factor

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	5	.6	8.6	8.6
	3	2	.2	3.4	12.1
	4	19	2.3	32.8	44.8
Very Important	5	32	3.8	55.2	100.0
	.	784	93.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.259	MEDIAN	5.000	MODE	5.000
STD DEV	1.148	VARIANCE	1.318	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 58 MISSING CASES 784

QC5A Pharmacists> Lower Cost Interchangeable

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	104	12.4	12.9	12.9
Disapprove	2	133	15.8	16.5	29.4
Neutral	3	118	14.0	14.6	44.0
Approve	4	300	35.6	37.2	81.2
Strongly Approve	5	152	18.1	18.8	100.0
	.	35	4.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.326	MEDIAN	4.000	MODE	4.000
STD DEV	1.304	VARIANCE	1.701	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 807 MISSING CASES 35

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QC5B Pharmacists> Central Computerised System

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	35	4.2	4.3	4.3
Disapprove	2	59	7.0	7.3	11.7
Neutral	3	188	22.3	23.4	35.0
Approve	4	311	36.9	38.6	73.7
Strongly Approve	5	212	25.2	26.3	100.0
	.	35	4.2	MISSING	
D.K.	8	2	.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.753	MEDIAN	4.000	MODE	4.000
STD DEV	1.059	VARIANCE	1.122	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 805 MISSING CASES 37

QC5C Pharmacists> Printed Info re Use/Effects

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	35	4.2	4.3	4.3
Disapprove	2	109	12.9	13.5	17.9
Neutral	3	177	21.0	22.0	39.9
Approve	4	298	35.4	37.0	76.9
Strongly Approve	5	186	22.1	23.1	100.0
	.	37	4.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.610	MEDIAN	4.000	MODE	4.000
STD DEV	1.111	VARIANCE	1.233	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 805 MISSING CASES 37

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QC5D Pharmacists> Fixed Annual Fee>Dispensing

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	132	15.7	16.5	16.5
Disapprove	2	198	23.5	24.7	41.2
Neutral	3	224	26.6	28.0	69.2
Approve	4	135	16.0	16.9	86.1
Strongly Approve	5	111	13.2	13.9	100.0
	.	41	4.9	MISSING	
D.K.	8	1	.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.869	MEDIAN	3.000	MODE	3.000
STD DEV	1.271	VARIANCE	1.616	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 800 MISSING CASES 42

QC5E Pharmacists> Report Double-Doctoring,etc

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	11	1.3	1.4	1.4
Disapprove	2	27	3.2	3.4	4.7
Neutral	3	45	5.3	5.6	10.3
Approve	4	283	33.6	35.2	45.5
Strongly Approve	5	439	52.1	54.5	100.0
	.	37	4.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.381	MEDIAN	5.000	MODE	5.000
STD DEV	.845	VARIANCE	.714	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 805 MISSING CASES 37

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QC5F Pharmacists> Notify Patients of Drug Sub

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	20	2.4	2.5	2.5
Disapprove	2	44	5.2	5.5	8.0
Neutral	3	123	14.6	15.4	23.4
Approve	4	306	36.3	38.2	61.6
Strongly Approve	5	307	36.5	38.4	100.0
	.	42	5.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.045	MEDIAN	4.000	MODE	5.000
STD DEV	.991	VARIANCE	.982	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 800 MISSING CASES 42

QC5G Drug Manuf.> Licence New Drugs=Improved

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	52	6.2	6.5	6.5
Disapprove	2	113	13.4	14.0	20.5
Neutral	3	129	15.3	16.0	36.5
Approve	4	310	36.8	38.5	74.9
Strongly Approve	5	202	24.0	25.1	100.0
.	.	35	4.2	MISSING	
D.K.	8	1	.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.617	MEDIAN	4.000	MODE	4.000
STD DEV	1.186	VARIANCE	1.407	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 806 MISSING CASES 36

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QC5H Drug Manuf.> Public Reg. Benefits >$100

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	82	9.7	10.3	10.3
Disapprove	2	103	12.2	12.9	23.2
Neutral	3	243	28.9	30.5	53.7
Approve	4	217	25.8	27.2	80.9
Strongly Approve	5	152	18.1	19.1	100.0
	.	45	5.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.319	MEDIAN	3.000	MODE	3.000
STD DEV	1.215	VARIANCE	1.476	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 797 MISSING CASES 45

QC5I Drug Manuf.> Info re Side-Effects in Ads

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	10	1.2	1.2	1.2
Disapprove	2	23	2.7	2.9	4.1
Neutral	3	94	11.2	11.7	15.8
Approve	4	385	45.7	47.8	63.5
Strongly Approve	5	294	34.9	36.5	100.0
	.	36	4.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.154	MEDIAN	4.000	MODE	4.000
STD DEV	.827	VARIANCE	.684	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 806 MISSING CASES 36

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QC5J Drug Manuf.> Two Years Patent Protection

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	200	23.8	25.2	25.2
Disapprove	2	222	26.4	28.0	53.1
Neutral	3	199	23.6	25.1	78.2
Approve	4	104	12.4	13.1	91.3
Strongly Approve	5	69	8.2	8.7	100.0
	.	46	5.5	MISSING	
D.K.	8	2	.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.521	MEDIAN	2.000	MODE	2.000
STD DEV	1.240	VARIANCE	1.539	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 794 MISSING CASES 48

QC5K Drug Manuf.> Coverage Ltd # of Products

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	88	10.5	11.0	11.0
Disapprove	2	168	20.0	21.0	32.0
Neutral	3	190	22.6	23.7	55.7
Approve	4	231	27.4	28.9	84.6
Strongly Approve	5	123	14.6	15.4	100.0
	.	42	5.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.166	MEDIAN	3.000	MODE	4.000
STD DEV	1.236	VARIANCE	1.528	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 800 MISSING CASES 42

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QC5L Prescribers> Professional Review System

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	36	4.3	4.5	4.5
Disapprove	2	97	11.5	12.0	16.5
Neutral	3	158	18.8	19.6	36.1
Approve	4	402	47.7	49.8	85.9
Strongly Approve	5	114	13.5	14.1	100.0
	.	35	4.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.571	MEDIAN	4.000	MODE	4.000
STD DEV	1.018	VARIANCE	1.037	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 807 MISSING CASES 35

QC5M Prescribers> Hosp Committees Monitor Drs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	44	5.2	5.5	5.5
Disapprove	2	142	16.9	17.7	23.1
Neutral	3	177	21.0	22.0	45.1
Approve	4	356	42.3	44.3	89.4
Strongly Approve	5	85	10.1	10.6	100.0
	.	38	4.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.368	MEDIAN	4.000	MODE	4.000
STD DEV	1.062	VARIANCE	1.127	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 804 MISSING CASES 38

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QC5N Prescribers> Continuing Educatn in Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	7	.8	.9	.9
Disapprove	2	22	2.6	2.7	3.6
Neutral	3	117	13.9	14.6	18.2
Approve	4	443	52.6	55.4	73.6
Strongly Approve	5	211	25.1	26.4	100.0
	.	42	5.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.036	MEDIAN	4.000	MODE	4.000
STD DEV	.773	VARIANCE	.598	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 800 MISSING CASES 42

QC50 Prescribers> Random Audits of Practices

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	105	12.5	13.2	13.2
Disapprove	2	168	20.0	21.1	34.3
Neutral	3	220	26.1	27.6	61.9
Approve	4	243	28.9	30.5	92.5
Strongly Approve	5	60	7.1	7.5	100.0
	.	46	5.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.981	MEDIAN	3.000	MODE	4.000
STD DEV	1.161	VARIANCE	1.347	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 796 MISSING CASES 46

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QC5P Prescribers> Elim. Special Authorization

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	298	35.4	37.5	37.5
Disapprove	2	241	28.6	30.3	67.8
Neutral	3	142	16.9	17.9	85.7
Approve	4	67	8.0	8.4	94.1
Strongly Approve	5	47	5.6	5.9	100.0
	.	46	5.5	MISSING	
D.K.	8	1	.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.150	MEDIAN	2.000	MODE	1.000
STD DEV	1.184	VARIANCE	1.402	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 795 MISSING CASES 47

QC5Q Prescribers> Record Drs ID on Prescript

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	105	12.5	13.3	13.3
Disapprove	2	107	12.7	13.6	26.9
Neutral	3	254	30.2	32.2	59.1
Approve	4	237	28.1	30.0	89.1
Strongly Approve	5	86	10.2	10.9	100.0
	.	53	6.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.117	MEDIAN	3.000	MODE	3.000
STD DEV	1.180	VARIANCE	1.392	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 789 MISSING CASES 53

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QC5R Patients>Ont Drug Benefit Plan Cover All

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	331	39.3	41.2	41.2
Disapprove	2	235	27.9	29.2	70.4
Neutral	3	108	12.8	13.4	83.8
Approve	4	86	10.2	10.7	94.5
Strongly Approve	5	44	5.2	5.5	100.0
	.	37	4.4	MISSING	
D.K.	8	1	.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.101	MEDIAN	2.000	MODE	1.000
STD DEV	1.208	VARIANCE	1.458	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 804 MISSING CASES 38

QC5S Patients> Computerised "Smart Card"

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	36	4.3	4.5	4.5
Disapprove	2	73	8.7	9.1	13.6
Neutral	3	136	16.2	16.9	30.5
Approve	4	326	38.7	40.6	71.1
Strongly Approve	5	232	27.6	28.9	100.0
	.	39	4.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.803	MEDIAN	4.000	MODE	4.000
STD DEV	1.090	VARIANCE	1.188	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 803 MISSING CASES 39

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QC5T Patients>Annual Co-Payment of $50 <ODBP>

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	59	7.0	7.4	7.4
Disapprove	2	99	11.8	12.5	19.9
Neutral	3	168	20.0	21.2	41.2
Approve	4	258	30.6	32.6	73.7
Strongly Approve	5	208	24.7	26.3	100.0
	.	50	5.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.577	MEDIAN	4.000	MODE	4.000
STD DEV	1.212	VARIANCE	1.468	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 792 MISSING CASES 50

QC5U Patients> Limit # Drugs Insured <ODBP>

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	64	7.6	8.0	8.0
Disapprove	2	175	20.8	21.8	29.8
Neutral	3	166	19.7	20.7	50.6
Approve	4	261	31.0	32.6	83.1
Strongly Approve	5	135	16.0	16.9	100.0
	.	41	4.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.285	MEDIAN	3.000	MODE	4.000
STD DEV	1.208	VARIANCE	1.459	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 801 MISSING CASES 41

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QC5V Patients> Elim. ODBP Over-Counter Drugs

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	45	5.3	5.6	5.6
Disapprove	2	141	16.7	17.7	23.3
Neutral	3	132	15.7	16.5	39.8
Approve	4	230	27.3	28.8	68.7
Strongly Approve	5	250	29.7	31.3	100.0
	.	44	5.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.625	MEDIAN	4.000	MODE	5.000
STD DEV	1.247	VARIANCE	1.555	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 798 MISSING CASES 44

QC5W Patients> Pharmacists Notify of Drug Sub

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Strongly Disapprove	1	17	2.0	2.1	2.1
Disapprove	2	48	5.7	6.0	8.1
Neutral	3	145	17.2	18.2	26.3
Approve	4	344	40.9	43.1	69.4
Strongly Approve	5	244	29.0	30.6	100.0
	.	44	5.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.940	MEDIAN	4.000	MODE	4.000
STD DEV	.958	VARIANCE	.917	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 798 MISSING CASES 44

QC6A Other Strategy for Monitoring/Improving

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
1	5	3	3	27	1	1	34	51	5	3	70
2	2	1	4	29	2	1	35	52	6	4	74
3	1	1	5	30	4	3	38	54	2	1	75
4	3	2	7	31	8	5	43	55	3	2	77
5	2	1	8	33	7	4	47	57	7	4	82
6	4	3	11	34	2	1	49	59	2	1	83
8	1	1	11	35	2	1	50	62	1	1	84
9	3	2	13	37	3	2	52	63	1	1	84
10	2	1	15	39	2	1	53	69	1	1	85
11	2	1	16	41	3	2	55	70	3	2	87
13	9	6	22	42	4	3	58	73	1	1	87
15	1	1	22	43	3	2	59	74	2	1	89
19	6	4	26	44	2	1	61	75	3	2	91
20	1	1	27	45	1	1	61	79	1	1	91
21	2	1	28	46	3	2	63	80	1	1	92
22	1	1	28	47	1	1	64	84	4	3	94
24	7	4	33	49	2	1	65	90	9	6	100
25	1	1	34	50	3	2	67				

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	684				

MEAN	39.032	MEDIAN	36.000	MODE	13.000
STD DEV	24.768	VARIANCE	613.445	MINIMUM	1.000
MAXIMUM	90.000				

VALID CASES	158	MISSING CASES	684

QC6B Other Strategy for Monitoring/Improving

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	2	1	.1	2.2	2.2
	4	1	.1	2.2	4.3
	8	1	.1	2.2	6.5
	13	1	.1	2.2	8.7
	14	1	.1	2.2	10.9
	22	2	.2	4.3	15.2
	23	1	.1	2.2	17.4
	31	1	.1	2.2	19.6
	34	3	.4	6.5	26.1
	35	2	.2	4.3	30.4
	37	1	.1	2.2	32.6
	39	1	.1	2.2	34.8
	40	2	.2	4.3	39.1
	41	1	.1	2.2	41.3
	42	1	.1	2.2	43.5
	44	3	.4	6.5	50.0
	49	2	.2	4.3	54.3
	52	3	.4	6.5	60.9
	54	3	.4	6.5	67.4
	55	1	.1	2.2	69.6
	56	2	.2	4.3	73.9
	57	2	.2	4.3	78.3
	58	1	.1	2.2	80.4
	67	2	.2	4.3	84.8
	69	1	.1	2.2	87.0
	73	1	.1	2.2	89.1
	75	2	.2	4.3	93.5
	81	1	.1	2.2	95.7
	90	1	.1	2.2	97.8
	99	1	.1	2.2	100.0
	.	796	94.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	46.370	MEDIAN	46.500	MODE	34.000
STD DEV	21.532	VARIANCE	463.616	MINIMUM	2.000
MAXIMUM	99.000				

VALID CASES 46 MISSING CASES 796

QD1A % Time Spent> Hosp & Nursing Home Staff

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	102	12.1	15.9	15.9
	1	10	1.2	1.6	17.5
	2	6	.7	.9	18.4
	3	1	.1	.2	18.6
	4	1	.1	.2	18.8
	5	60	7.1	9.4	28.1
	7	3	.4	.5	28.6
	8	6	.7	.9	29.5
	10	90	10.7	14.1	43.6
	12	1	.1	.2	43.8
	13	1	.1	.2	43.9
	15	24	2.9	3.7	47.7
	16	1	.1	.2	47.8
	18	2	.2	.3	48.1
	20	52	6.2	8.1	56.3
	24	1	.1	.2	56.4
	25	25	3.0	3.9	60.3
	27	1	.1	.2	60.5
	30	25	3.0	3.9	64.4
	33	1	.1	.2	64.5
	35	2	.2	.3	64.8
	40	14	1.7	2.2	67.0
	45	3	.4	.5	67.5
	50	48	5.7	7.5	75.0
	60	19	2.3	3.0	78.0
	65	1	.1	.2	78.1
	66	2	.2	.3	78.4
	70	7	.8	1.1	79.5
	75	4	.5	.6	80.2
	80	26	3.1	4.1	84.2
	85	1	.1	.2	84.4
	90	21	2.5	3.3	87.7
	95	5	.6	.8	88.4
	98	1	.1	.2	88.6
	99	1	.1	.2	88.7
	100	72	8.6	11.2	100.0
	.	202	24.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	33.520	MEDIAN	20.000	MODE	.000
STD DEV	34.876	VARIANCE	1216.325	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 640 MISSING CASES 202

QD1B % Time Spent> Academic Staff

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	265	31.5	50.0	50.0
	1	13	1.5	2.5	52.5
	2	7	.8	1.3	53.8
	3	3	.4	.6	54.3
	4	1	.1	.2	54.5
	5	37	4.4	7.0	61.5
	8	2	.2	.4	61.9
	10	43	5.1	8.1	70.0
	15	4	.5	.8	70.8
	20	33	3.9	6.2	77.0
	25	4	.5	.8	77.7
	30	11	1.3	2.1	79.8
	33	1	.1	.2	80.0
	35	3	.4	.6	80.6
	40	8	1.0	1.5	82.1
	45	1	.1	.2	82.3
	50	26	3.1	4.9	87.2
	58	1	.1	.2	87.4
	60	4	.5	.8	88.1
	70	1	.1	.2	88.3
	75	5	.6	.9	89.2
	80	6	.7	1.1	90.4
	90	3	.4	.6	90.9
	95	1	.1	.2	91.1
	100	47	5.6	8.9	100.0
	.	312	37.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	18.702	MEDIAN	.500	MODE	.000
STD DEV	31.463	VARIANCE	989.919	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 530 MISSING CASES 312

QD1C % Time Spent> Gov't Staff (incl. Health)

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	347	41.2	87.2	87.2
	1	1	.1	.3	87.4
	2	4	.5	1.0	88.4
	4	1	.1	.3	88.7
	5	9	1.1	2.3	91.0
	10	10	1.2	2.5	93.5
	20	2	.2	.5	94.0
	25	1	.1	.3	94.2
	40	1	.1	.3	94.5
	50	3	.4	.8	95.2
	60	1	.1	.3	95.5
	80	3	.4	.8	96.2
	90	3	.4	.8	97.0
	95	2	.2	.5	97.5
	98	1	.1	.3	97.7
	100	9	1.1	2.3	100.0
	.	444	52.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	5.455	MEDIAN	.000	MODE	.000
STD DEV	20.368	VARIANCE	414.848	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 398 MISSING CASES 444

QD1D % Time Spent>Community Hlth Centre Staff

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	301	35.7	76.4	76.4
	1	2	.2	.5	76.9
	2	3	.4	.8	77.7
	3	2	.2	.5	78.2
	5	15	1.8	3.8	82.0
	8	1	.1	.3	82.2
	10	24	2.9	6.1	88.3
	15	2	.2	.5	88.8
	20	5	.6	1.3	90.1
	28	1	.1	.3	90.4
	40	1	.1	.3	90.6
	45	2	.2	.5	91.1
	50	5	.6	1.3	92.4
	51	1	.1	.3	92.6
	60	3	.4	.8	93.4
	65	2	.2	.5	93.9
	70	7	.8	1.8	95.7
	80	2	.2	.5	96.2
	90	6	.7	1.5	97.7
	100	9	1.1	2.3	100.0
	.	448	53.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	8.442	MEDIAN	.000	MODE	.000
STD DEV	22.768	VARIANCE	518.395	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 394 MISSING CASES 448

QD1E % Time Spent> Corporate Staff

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	319	37.9	89.6	89.6
	1	4	.5	1.1	90.7
	2	1	.1	.3	91.0
	4	1	.1	.3	91.3
	5	6	.7	1.7	93.0
	8	1	.1	.3	93.3
	9	1	.1	.3	93.5
	10	13	1.5	3.7	97.2
	15	2	.2	.6	97.8
	20	3	.4	.8	98.6
	50	2	.2	.6	99.2
	90	1	.1	.3	99.4
	100	2	.2	.6	100.0
	.	486	57.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.874	MEDIAN	.000	MODE	.000
STD DEV	9.946	VARIANCE	98.928	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 356 MISSING CASES 486

QD1F % Time Spent> Other Staff

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	182	21.6	60.5	60.5
	1	3	.4	1.0	61.5
	2	2	.2	.7	62.1
	5	10	1.2	3.3	65.4
	7	1	.1	.3	65.8
	10	9	1.1	3.0	68.8
	15	2	.2	.7	69.4
	20	11	1.3	3.7	73.1
	30	2	.2	.7	73.8
	40	5	.6	1.7	75.4
	50	5	.6	1.7	77.1
	55	1	.1	.3	77.4
	60	5	.6	1.7	79.1
	65	3	.4	1.0	80.1
	67	1	.1	.3	80.4
	70	7	.8	2.3	82.7
	75	2	.2	.7	83.4
	80	3	.4	1.0	84.4
	85	3	.4	1.0	85.4
	89	1	.1	.3	85.7
	90	13	1.5	4.3	90.0
	95	5	.6	1.7	91.7
	98	1	.1	.3	92.0
	99	1	.1	.3	92.4
	100	23	2.7	7.6	100.0
	.	541	64.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	22.914	MEDIAN	.000	MODE	.000
STD DEV	36.637	VARIANCE	1342.299	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 301 MISSING CASES 541

QD1TOTAL % Total Time Spent in Practice

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	45	5.3	11.2	11.2
	1	1	.1	.2	11.5
	2	2	.2	.5	12.0
	3	1	.1	.2	12.2
	4	2	.2	.5	12.7
	5	22	2.6	5.5	18.2
	6	2	.2	.5	18.8
	7	1	.1	.2	19.0
	8	1	.1	.2	19.2
	10	40	4.8	10.0	29.2
	11	1	.1	.2	29.5
	12	5	.6	1.2	30.7
	13	1	.1	.2	31.0
	14	1	.1	.2	31.3
	15	11	1.3	2.7	34.0
	17	2	.2	.5	34.5
	18	1	.1	.2	34.7
	20	18	2.1	4.5	39.2
	21	2	.2	.5	39.7
	25	9	1.1	2.2	42.0
	26	1	.1	.2	42.2
	30	14	1.7	3.5	45.7
	35	6	.7	1.5	47.2
	40	7	.8	1.7	49.0
	45	1	.1	.2	49.2
	50	6	.7	1.5	50.7
	51	1	.1	.2	51.0
	52	1	.1	.2	51.2
	55	1	.1	.2	51.5
	60	9	1.1	2.2	53.7
	65	1	.1	.2	54.0
	66	1	.1	.2	54.2
	72	1	.1	.2	54.5
	75	2	.2	.5	55.0
	80	1	.1	.2	55.2
	90	1	.1	.2	55.5
	95	3	.4	.7	56.3
	100	175	20.8	43.8	100.0
	.	442	52.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	54.455	MEDIAN	50.000	MODE	100.000
STD DEV	43.156	VARIANCE	1862.424	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 400 MISSING CASES 442

QD2 Currently in Partnership/Business

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	318	37.8	54.2	54.2
Yes	2	269	31.9	45.8	100.0
	.	255	30.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.458	MEDIAN	1.000	MODE	1.000
STD DEV	.499	VARIANCE	.249	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 587 MISSING CASES 255

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QD3 Formal Arrangements Share Income/Expense

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	338	40.1	62.0	62.0
Yes	2	207	24.6	38.0	100.0
	.	297	35.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.380	MEDIAN	1.000	MODE	1.000
STD DEV	.486	VARIANCE	.236	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 545 MISSING CASES 297

QD4 Arrangements Share Coverage/On-Call/etc

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	125	14.8	22.9	22.9
Yes	2	421	50.0	77.1	100.0
	.	296	35.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.771	MEDIAN	2.000	MODE	2.000
STD DEV	.421	VARIANCE	.177	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 546 MISSING CASES 296

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QD5 Utilize Common Patient Records With Drs.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	300	35.6	55.1	55.1
Yes	2	244	29.0	44.9	100.0
	.	298	35.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.449	MEDIAN	1.000	MODE	1.000
STD DEV	.498	VARIANCE	.248	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 544 MISSING CASES 298

QD6 # Full-Time Physicians Associated With

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	19	2.3	8.0	8.0
	1	47	5.6	19.8	27.8
	2	27	3.2	11.4	39.2
	3	26	3.1	11.0	50.2
	4	22	2.6	9.3	59.5
	5	19	2.3	8.0	67.5
	6	14	1.7	5.9	73.4
	7	6	.7	2.5	75.9
	8	4	.5	1.7	77.6
	9	1	.1	.4	78.1
	10	8	1.0	3.4	81.4
	11	2	.2	.8	82.3
	12	2	.2	.8	83.1
	13	4	.5	1.7	84.8
	14	4	.5	1.7	86.5
	15	2	.2	.8	87.3
	16	2	.2	.8	88.2
	17	2	.2	.8	89.0
	20	3	.4	1.3	90.3
	23	1	.1	.4	90.7
	25	1	.1	.4	91.1
	30	3	.4	1.3	92.4
	32	2	.2	.8	93.2
	34	2	.2	.8	94.1
	35	4	.5	1.7	95.8
	38	1	.1	.4	96.2
	40	2	.2	.8	97.0
	43	1	.1	.4	97.5
	50	2	.2	.8	98.3
	60	1	.1	.4	98.7
	70	1	.1	.4	99.2
	75	1	.1	.4	99.6
	99	1	.1	.4	100.0
	.	605	71.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	7.992	MEDIAN	3.000	MODE	1.000
STD DEV	13.225	VARIANCE	174.907	MINIMUM	.000
MAXIMUM	99.000				

VALID CASES 237 MISSING CASES 605

QD7A Determine Income> Years in Practice

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	108	12.8	50.2	50.2
	2	35	4.2	16.3	66.5
	3	26	3.1	12.1	78.6
	4	30	3.6	14.0	92.6
Very Important	5	16	1.9	7.4	100.0
	.	627	74.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.121	MEDIAN	1.000	MODE	1.000
STD DEV	1.358	VARIANCE	1.845	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 215 MISSING CASES 627

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QD7B Determine Income> Time in Group

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	120	14.3	57.7	57.7
	2	25	3.0	12.0	69.7
	3	26	3.1	12.5	82.2
	4	27	3.2	13.0	95.2
Very Important	5	10	1.2	4.8	100.0
	.	634	75.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.952	MEDIAN	1.000	MODE	1.000
STD DEV	1.288	VARIANCE	1.660	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 208 MISSING CASES 634

QD7C Determine Income> Volume/Mix Services

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	44	5.2	21.0	21.0
	2	7	.8	3.3	24.3
	3	27	3.2	12.9	37.1
	4	67	8.0	31.9	69.0
Very Important	5	65	7.7	31.0	100.0
	.	632	75.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	3.486	MEDIAN	4.000	MODE	4.000
STD DEV	1.484	VARIANCE	2.203	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 210 MISSING CASES 632

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QD7E Determine Income> Dollar Investment

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	147	17.5	72.1	72.1
	2	17	2.0	8.3	80.4
	3	23	2.7	11.3	91.7
	4	13	1.5	6.4	98.0
Very Important	5	4	.5	2.0	100.0
	.	638	75.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.578	MEDIAN	1.000	MODE	1.000
STD DEV	1.045	VARIANCE	1.092	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 204 MISSING CASES 638

- -

QD7F Determine Income> Enrolled Patients

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	97	11.5	45.8	45.8
	2	14	1.7	6.6	52.4
	3	19	2.3	9.0	61.3
	4	43	5.1	20.3	81.6
Very Important	5	39	4.6	18.4	100.0
	.	630	74.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.590	MEDIAN	2.000	MODE	1.000
STD DEV	1.637	VARIANCE	2.679	MINIMUM	1.000
MAXIMUM	5.000				

VALID CASES 212 MISSING CASES 630

QD8A Monitor Physicians> Hospitalizatn Patt

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	239	28.4	59.5	59.5
Yes	2	163	19.4	40.5	100.0
	.	440	52.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.405	MEDIAN	1.000	MODE	1.000
STD DEV	.492	VARIANCE	.242	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 402 MISSING CASES 440

- -

QD8B Monitor Physicians> Prescribing

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	307	36.5	76.6	76.6
Yes	2	94	11.2	23.4	100.0
	.	441	52.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.234	MEDIAN	1.000	MODE	1.000
STD DEV	.424	VARIANCE	.180	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 401 MISSING CASES 441

QD8C Monitor Physicians> Workloads

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	238	28.3	58.9	58.9
Yes	2	166	19.7	41.1	100.0
	.	438	52.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.411	MEDIAN	1.000	MODE	1.000
STD DEV	.493	VARIANCE	.243	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 404 MISSING CASES 438

- -

QD8D Monitor Physicians> Lab Tests

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	297	35.3	74.1	74.1
Yes	2	104	12.4	25.9	100.0
	.	441	52.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.259	MEDIAN	1.000	MODE	1.000
STD DEV	.439	VARIANCE	.193	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 401 MISSING CASES 441

QD8E Monitor Physicians> Billing Practices

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	260	30.9	65.8	65.8
Yes	2	135	16.0	34.2	100.0
	.	447	53.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.342	MEDIAN	1.000	MODE	1.000
STD DEV	.475	VARIANCE	.226	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 395 MISSING CASES 447

- -

QD9 Practice in Assoc. With Other Physicians

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Family& General	1	158	18.8	37.4	37.4
Single Special	2	188	22.3	44.5	82.0
Multiple +Family	3	41	4.9	9.7	91.7
Multiple Not Family	4	35	4.2	8.3	100.0
	.	420	49.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.889	MEDIAN	2.000	MODE	2.000
STD DEV	.890	VARIANCE	.793	MINIMUM	1.000
MAXIMUM	4.000				

VALID CASES 422 MISSING CASES 420

QD10 # Patients Regard You As Personal Phys

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	213	36	36	92	1	0	48	1350	1	0	73
1	2	0	36	100	30	5	53	1400	1	0	73
2	2	0	36	125	1	0	53	1405	1	0	73
3	1	0	37	130	1	0	54	1500	34	6	79
5	2	0	37	150	7	1	55	1750	3	1	79
6	3	1	37	200	5	1	56	1800	6	1	80
7	1	0	38	250	2	0	56	1850	1	0	80
10	6	1	39	300	11	2	58	2000	51	9	89
13	1	0	39	350	1	0	58	2100	1	0	89
15	3	1	39	400	2	0	58	2250	1	0	89
16	1	0	39	450	1	0	58	2500	18	3	92
17	1	0	40	500	11	2	60	2600	1	0	92
20	12	2	42	600	6	1	61	2800	1	0	93
25	2	0	42	650	1	0	62	3000	22	4	96
30	5	1	43	700	4	1	62	3200	1	0	96
35	2	0	43	750	3	1	63	3500	3	1	97
40	3	1	44	800	6	1	64	4000	8	1	98
45	1	0	44	870	1	0	64	4500	1	0	98
50	17	3	47	875	1	0	64	5000	3	1	99
55	2	0	47	1000	32	5	69	6000	2	0	99
60	3	1	48	1100	1	0	70	9000	1	0	99
70	2	0	48	1200	12	2	72	9500	1	0	100
87	1	0	48	1300	5	1	72	9999	2	0	100

M I S S I N G D A T A

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	247				

MEAN	840.138	MEDIAN	100.000	MODE	.000
STD DEV	1311.821	VARIANCE	1720873.79	MINIMUM	.000
MAXIMUM	9999.000				

VALID CASES 595 MISSING CASES 247

QD11 # Hours Work Last Typical Working Week

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	14	2	2	34	3	0	13	58	2	0	70
2	1	0	2	35	15	2	15	59	1	0	70
7	1	0	2	36	11	1	16	60	118	16	86
8	3	0	3	37	4	1	17	61	2	0	86
10	1	0	3	38	6	1	18	62	5	1	87
11	2	0	3	39	2	0	18	63	1	0	87
12	2	0	3	40	70	9	27	64	5	1	88
14	1	0	3	41	2	0	27	65	29	4	92
15	3	0	4	42	12	2	29	66	1	0	92
16	2	0	4	43	3	0	29	67	2	0	92
18	4	1	4	44	12	2	31	68	2	0	92
19	1	0	5	45	52	7	38	69	1	0	92
20	8	1	6	46	4	1	38	70	27	4	96
21	1	0	6	47	3	0	39	72	3	0	96
22	1	0	6	48	32	4	43	74	1	0	96
24	5	1	7	49	2	0	43	75	5	1	97
25	11	1	8	50	127	17	60	76	2	0	97
26	3	0	8	51	1	0	60	78	1	0	97
27	1	0	9	52	11	1	62	80	9	1	99
28	3	0	9	53	2	0	62	82	1	0	99
29	1	0	9	54	6	1	63	85	3	0	99
30	14	2	11	55	53	7	70	90	3	0	100
32	7	1	12	56	3	0	70	98	1	0	100
33	5	1	13	57	1	0	70	99	2	0	100

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	83				

MEAN	48.783	MEDIAN	50.000	MODE	50.000
STD DEV	15.443	VARIANCE	238.479	MINIMUM	.000
MAXIMUM	99.000				

VALID CASES	759	MISSING CASES	83

QD12A Hospital or Nursing Home In-Patient Care

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	93	15	15	18	11	2	76	41	1	0	94
1	28	4	19	20	44	7	83	42	3	0	94
2	43	7	26	21	2	0	83	45	4	1	95
3	30	5	30	22	1	0	83	48	3	0	95
4	25	4	34	23	1	0	84	50	14	2	98
5	66	10	45	24	4	1	84	51	1	0	98
6	32	5	50	25	14	2	86	52	1	0	98
7	7	1	51	26	1	0	87	53	1	0	98
8	22	3	54	27	2	0	87	55	3	0	99
9	4	1	55	28	2	0	87	60	3	0	99
10	63	10	65	30	13	2	89	61	1	0	99
11	2	0	65	32	1	0	89	70	2	0	100
12	15	2	67	35	6	1	90	80	1	0	100
14	4	1	68	36	2	0	91	95	1	0	100
15	29	5	72	37	1	0	91	99	1	0	100
16	9	1	74	39	1	0	91				
17	4	1	74	40	18	3	94				

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	202				

MEAN	12.556	MEDIAN	7.000	MODE	.000
STD DEV	14.813	VARIANCE	219.418	MINIMUM	.000
MAXIMUM	99.000				

VALID CASES 640 MISSING CASES 202

QD12B Hospital Out-Patient or Emergency Care

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	150	17.8	27.6	27.6
	1	35	4.2	6.4	34.1
	2	45	5.3	8.3	42.4
	3	19	2.3	3.5	45.9
	4	34	4.0	6.3	52.1
	5	50	5.9	9.2	61.3
	6	25	3.0	4.6	65.9
	7	5	.6	.9	66.9
	8	13	1.5	2.4	69.2
	9	1	.1	.2	69.4
	10	54	6.4	9.9	79.4
	11	2	.2	.4	79.7
	12	12	1.4	2.2	82.0
	13	2	.2	.4	82.3
	14	1	.1	.2	82.5
	15	12	1.4	2.2	84.7
	16	6	.7	1.1	85.8
	18	6	.7	1.1	86.9
	20	19	2.3	3.5	90.4
	24	4	.5	.7	91.2
	25	11	1.3	2.0	93.2
	28	1	.1	.2	93.4
	30	11	1.3	2.0	95.4
	31	1	.1	.2	95.6
	32	2	.2	.4	95.9
	33	1	.1	.2	96.1
	34	1	.1	.2	96.3
	35	3	.4	.6	96.9
	38	1	.1	.2	97.1
	40	4	.5	.7	97.8
	41	1	.1	.2	98.0
	44	1	.1	.2	98.2
	45	1	.1	.2	98.3
	50	3	.4	.6	98.9
	60	2	.2	.4	99.3
	63	1	.1	.2	99.4
	70	2	.2	.4	99.8
	90	1	.1	.2	100.0
	.	299	35.5	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	7.851	MEDIAN	4.000	MODE	.000
STD DEV	11.470	VARIANCE	131.552	MINIMUM	.000
MAXIMUM	90.000				

VALID CASES 543 MISSING CASES 299

QD12C 8 Hours Patient Care in Your Own Office

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	50	8	8	21	2	0	36	42	2	0	87
1	2	0	8	22	6	1	37	43	4	1	88
2	2	0	9	23	6	1	38	44	10	2	89
4	2	0	9	24	14	2	41	45	14	2	92
5	17	3	12	25	35	6	46	46	4	1	92
6	4	1	12	26	3	0	47	47	1	0	93
7	3	0	13	27	8	1	48	48	5	1	93
8	11	2	15	28	9	1	49	49	1	0	94
9	3	0	15	29	2	0	50	50	20	3	97
10	29	5	20	30	62	10	60	52	3	0	97
11	1	0	20	31	3	0	60	53	1	0	97
12	11	2	22	32	12	2	62	58	1	0	98
13	2	0	22	33	3	0	63	60	7	1	99
14	2	0	23	34	10	2	64	65	1	0	99
15	17	3	25	35	31	5	69	66	1	0	99
16	11	2	27	36	16	3	72	69	1	0	99
17	4	1	28	37	4	1	73	75	2	0	100
18	10	2	29	38	9	1	74	80	1	0	100
19	5	1	30	39	6	1	75	90	1	0	100
20	36	6	36	40	73	12	87	99	1	0	100

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	225				

MEAN	26.904	MEDIAN	30.000	MODE	40.000
STD DEV	15.692	VARIANCE	246.233	MINIMUM	.000
MAXIMUM	99.000				

VALID CASES 617 MISSING CASES 225

QD12D 8 Hours Typical Week Spent Home Visits

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	225	26.7	49.1	49.1
	1	98	11.6	21.4	70.5
	2	55	6.5	12.0	82.5
	3	23	2.7	5.0	87.6
	4	18	2.1	3.9	91.5
	5	19	2.3	4.1	95.6
	6	4	.5	.9	96.5
	7	1	.1	.2	96.7
	8	2	.2	.4	97.2
	10	7	.8	1.5	98.7
	12	3	.4	.7	99.3
	15	1	.1	.2	99.6
	20	1	.1	.2	99.8
	25	1	.1	.2	100.0
	.	384	45.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.434	MEDIAN	1.000	MODE	.000
STD DEV	2.583	VARIANCE	6.671	MINIMUM	.000
MAXIMUM	25.000				

VALID CASES 458 MISSING CASES 384

QD12E Hours Administration/Paperwork/Meetings

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	30	3.6	4.6	4.6
	1	57	6.8	8.7	13.3
	2	85	10.1	13.0	26.3
	3	53	6.3	8.1	34.4
	4	68	8.1	10.4	44.8
	5	112	13.3	17.1	61.9
	6	32	3.8	4.9	66.8
	7	11	1.3	1.7	68.5
	8	33	3.9	5.0	73.5
	9	4	.5	.6	74.2
	10	92	10.9	14.1	88.2
	11	1	.1	.2	88.4
	12	8	1.0	1.2	89.6
	13	1	.1	.2	89.8
	14	1	.1	.2	89.9
	15	20	2.4	3.1	93.0
	16	2	.2	.3	93.3
	20	15	1.8	2.3	95.6
	22	1	.1	.2	95.7
	24	1	.1	.2	95.9
	25	6	.7	.9	96.8
	27	1	.1	.2	96.9
	30	3	.4	.5	97.4
	35	3	.4	.5	97.9
	37	1	.1	.2	98.0
	38	1	.1	.2	98.2
	40	7	.8	1.1	99.2
	43	1	.1	.2	99.4
	50	1	.1	.2	99.5
	75	1	.1	.2	99.7
	80	2	.2	.3	100.0
	.	188	22.3	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	6.994	MEDIAN	5.000	MODE	5.000
STD DEV	8.524	VARIANCE	72.665	MINIMUM	.000
MAXIMUM	80.000				

VALID CASES 654 MISSING CASES 188

QD12F # Hours Continuing Education/Reading

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	23	2.7	3.6	3.6
	1	76	9.0	12.0	15.7
	2	156	18.5	24.7	40.4
	3	81	9.6	12.8	53.2
	4	48	5.7	7.6	60.9
	5	113	13.4	17.9	78.8
	6	26	3.1	4.1	82.9
	7	12	1.4	1.9	84.8
	8	16	1.9	2.5	87.3
	9	2	.2	.3	87.6
	10	56	6.7	8.9	96.5
	12	4	.5	.6	97.1
	15	5	.6	.8	97.9
	16	1	.1	.2	98.1
	18	1	.1	.2	98.3
	20	8	1.0	1.3	99.5
	25	1	.1	.2	99.7
	30	1	.1	.2	99.8
	45	1	.1	.2	100.0
	.	211	25.1	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.360	MEDIAN	3.000	MODE	2.000
STD DEV	4.057	VARIANCE	16.459	MINIMUM	.000
MAXIMUM	45.000				

VALID CASES 631 MISSING CASES 211

QD12G # Hours Week Teaching and Research

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	220	26.1	45.8	45.8
	1	30	3.6	6.3	52.1
	2	37	4.4	7.7	59.8
	3	20	2.4	4.2	64.0
	4	17	2.0	3.5	67.5
	5	40	4.8	8.3	75.8
	6	5	.6	1.0	76.9
	7	4	.5	.8	77.7
	8	9	1.1	1.9	79.6
	9	2	.2	.4	80.0
	10	40	4.8	8.3	88.3
	12	2	.2	.4	88.7
	13	1	.1	.2	89.0
	14	1	.1	.2	89.2
	15	9	1.1	1.9	91.0
	16	1	.1	.2	91.2
	18	2	.2	.4	91.7
	20	13	1.5	2.7	94.4
	24	2	.2	.4	94.8
	25	4	.5	.8	95.6
	30	6	.7	1.2	96.9
	34	1	.1	.2	97.1
	40	3	.4	.6	97.7
	45	4	.5	.8	98.5
	50	1	.1	.2	98.7
	55	1	.1	.2	99.0
	60	2	.2	.4	99.4
	75	1	.1	.2	99.6
	80	1	.1	.2	99.8
	90	1	.1	.2	100.0
	.	362	43.0	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	5.438	MEDIAN	1.000	MODE	.000
STD DEV	10.937	VARIANCE	119.608	MINIMUM	.000
MAXIMUM	90.000				

VALID CASES 480 MISSING CASES 362

QD12H # Hours Spent Typical Week On-Call

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0	91	19	19	21	1	0	52	56	2	0	87
1	1	0	19	24	75	16	68	60	6	1	88
2	1	0	20	25	3	1	68	64	3	1	89
3	2	0	20	26	1	0	68	65	1	0	89
4	7	1	21	27	1	0	69	66	1	0	89
5	9	2	23	28	3	1	69	70	1	0	89
6	6	1	25	30	17	4	73	72	8	2	91
7	2	0	25	32	1	0	73	75	1	0	91
8	14	3	28	34	3	1	74	76	1	0	91
9	2	0	28	35	5	1	75	80	6	1	93
10	21	4	33	36	12	3	77	84	2	0	93
11	1	0	33	38	1	0	78	86	1	0	93
12	33	7	40	40	10	2	80	88	1	0	93
14	12	3	42	42	3	1	80	89	1	0	94
15	10	2	45	45	1	0	80	90	1	0	94
16	14	3	47	48	19	4	84	96	4	1	95
18	3	1	48	50	7	1	86	98	1	0	95
19	1	0	48	54	1	0	86	99	24	5	100
20	16	3	52	55	1	0	86				

M I S S I N G D A T A

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	366				

MEAN	26.321	MEDIAN	20.000	MODE	.000
STD DEV	27.123	VARIANCE	735.667	MINIMUM	.000
MAXIMUM	99.000				

VALID CASES 476 MISSING CASES 366

QD12I # Hours Spent Typical Week Other Way

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	19	2.3	22.1	22.1
	1	4	.5	4.7	26.7
	2	9	1.1	10.5	37.2
	3	2	.2	2.3	39.5
	4	3	.4	3.5	43.0
	5	7	.8	8.1	51.2
	6	4	.5	4.7	55.8
	9	2	.2	2.3	58.1
	10	7	.8	8.1	66.3
	12	4	.5	4.7	70.9
	14	3	.4	3.5	74.4
	15	2	.2	2.3	76.7
	20	2	.2	2.3	79.1
	22	1	.1	1.2	80.2
	23	1	.1	1.2	81.4
	25	1	.1	1.2	82.6
	26	1	.1	1.2	83.7
	30	1	.1	1.2	84.9
	32	2	.2	2.3	87.2
	35	2	.2	2.3	89.5
	40	1	.1	1.2	90.7
	44	1	.1	1.2	91.9
	50	3	.4	3.5	95.3
	58	1	.1	1.2	96.5
	63	1	.1	1.2	97.7
	82	1	.1	1.2	98.8
	99	1	.1	1.2	100.0
	.	756	89.8	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	13.291	MEDIAN	5.000	MODE	.000
STD DEV	19.133	VARIANCE	366.067	MINIMUM	.000
MAXIMUM	99.000				

VALID CASES 86 MISSING CASES 756

QD13 # Weeks Vacation Take During 1988

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	20	2.4	2.6	2.6
	1	24	2.9	3.2	5.8
	2	114	13.5	15.0	20.8
	3	117	13.9	15.4	36.2
	4	255	30.3	33.6	69.8
	5	92	10.9	12.1	81.9
	6	75	8.9	9.9	91.8
	7	15	1.8	2.0	93.8
	8	23	2.7	3.0	96.8
	9	4	.5	.5	97.4
	10	5	.6	.7	98.0
	11	1	.1	.1	98.2
	12	8	1.0	1.1	99.2
	14	1	.1	.1	99.3
	16	1	.1	.1	99.5
	18	1	.1	.1	99.6
	27	1	.1	.1	99.7
	28	1	.1	.1	99.9
	47	1	.1	.1	100.0
	.	83	9.9	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	4.170	MEDIAN	4.000	MODE	4.000
STD DEV	2.864	VARIANCE	8.202	MINIMUM	.000
MAXIMUM	47.000				

VALID CASES 759 MISSING CASES 83

QD14A % of Earnings Derived> Fee-For-Service

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	6	.7	.9	.9
	1	1	.1	.1	1.0
	2	2	.2	.3	1.3
	5	11	1.3	1.6	2.9
	10	16	1.9	2.4	5.3
	15	3	.4	.4	5.7
	20	9	1.1	1.3	7.1
	25	4	.5	.6	7.6
	30	4	.5	.6	8.2
	33	1	.1	.1	8.4
	40	8	1.0	1.2	9.6
	45	3	.4	.4	10.0
	50	25	3.0	3.7	13.7
	53	1	.1	.1	13.8
	55	2	.2	.3	14.1
	60	12	1.4	1.8	15.9
	65	3	.4	.4	16.3
	66	2	.2	.3	16.6
	67	3	.4	.4	17.1
	70	16	1.9	2.4	19.4
	72	1	.1	.1	19.6
	75	13	1.5	1.9	21.5
	78	2	.2	.3	21.8
	80	14	1.7	2.1	23.8
	85	4	.5	.6	24.4
	87	1	.1	.1	24.6
	88	2	.2	.3	24.9
	90	24	2.9	3.5	28.4
	92	1	.1	.1	28.5
	94	1	.1	.1	28.7
	95	18	2.1	2.6	31.3
	97	5	.6	.7	32.1
	98	12	1.4	1.8	33.8
	99	12	1.4	1.8	35.6
	100	438	52.0	64.4	100.0
	.	162	19.2	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	86.125	MEDIAN	100.000	MODE	100.000
STD DEV	26.649	VARIANCE	710.183	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 680 MISSING CASES 162

QD14B % of Earnings Derived> Salary

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	41	4.9	11.7	11.7
	1	11	1.3	3.1	14.9
	2	11	1.3	3.1	18.0
	3	5	.6	1.4	19.4
	5	15	1.8	4.3	23.7
	8	1	.1	.3	24.0
	10	17	2.0	4.9	28.9
	12	2	.2	.6	29.4
	13	1	.1	.3	29.7
	15	3	.4	.9	30.6
	18	1	.1	.3	30.9
	20	13	1.5	3.7	34.6
	22	2	.2	.6	35.1
	25	13	1.5	3.7	38.9
	30	14	1.7	4.0	42.9
	33	5	.6	1.4	44.3
	35	3	.4	.9	45.1
	40	13	1.5	3.7	48.9
	45	2	.2	.6	49.4
	47	1	.1	.3	49.7
	50	26	3.1	7.4	57.1
	55	3	.4	.9	58.0
	60	8	1.0	2.3	60.3
	66	1	.1	.3	60.6
	70	4	.5	1.1	61.7
	75	4	.5	1.1	62.9
	80	9	1.1	2.6	65.4
	85	3	.4	.9	66.3
	90	13	1.5	3.7	70.0
	95	11	1.3	3.1	73.1
	98	2	.2	.6	73.7
	99	1	.1	.3	74.0
	100	91	10.8	26.0	100.0
	.	492	58.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	50.151	MEDIAN	50.000	MODE	100.000
STD DEV	40.009	VARIANCE	1600.713	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 350 MISSING CASES 492

QD14C % of Earnings Derived> Capitation

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	71	8.4	74.7	74.7
	5	1	.1	1.1	75.8
	10	7	.8	7.4	83.2
	15	1	.1	1.1	84.2
	20	1	.1	1.1	85.3
	40	1	.1	1.1	86.3
	50	1	.1	1.1	87.4
	80	2	.2	2.1	89.5
	90	4	.5	4.2	93.7
	100	6	.7	6.3	100.0
	.	747	88.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	13.895	MEDIAN	.000	MODE	.000
STD DEV	31.337	VARIANCE	982.010	MINIMUM	.000
MAXIMUM	100.000				

VALID CASES 95 MISSING CASES 747

QD15 Certified as a Specialist <incl. CFP>

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
No	1	276	32.8	32.9	32.9
Yes,CFP	2	130	15.4	15.5	48.4
Other	3	43	5.1	5.1	53.5
Internal/Subspec	11	74	8.8	8.8	62.3
Neurology	12	9	1.1	1.1	63.4
Psychiatry	13	75	8.9	8.9	72.3
Public Health	14	4	.5	.5	72.8
General Surgery	15	28	3.3	3.3	76.2
Cardio & Thoracic	16	5	.6	.6	76.8
Obstetrics & Gynec	17	20	2.4	2.4	79.1
Ophthnamology	18	19	2.3	2.3	81.4
Medical microbio	19	1	.1	.1	81.5
Pathology	20	4	.5	.5	82.0
Radiology-diagnosis	21	8	1.0	1.0	83.0
Radiology-therap	22	10	1.2	1.2	84.1
Anatsthesia	23	26	3.1	3.1	87.2
Dermatology	26	4	.5	.5	87.7
Pediatrics	27	30	3.6	3.6	91.3
Physical & Rehab	28	1	.1	.1	91.4
Orthopedic Surgery	30	6	.7	.7	92.1
Plastic Surgery	31	3	.4	.4	92.5
Urology	32	10	1.2	1.2	93.7
FRCP/FRCP(C)	51	31	3.7	3.7	97.4
FRCS/FRCS(C)	52	12	1.4	1.4	98.8
Emergency Medicine	53	10	1.2	1.2	100.0
	.	3	.4	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	10.912	MEDIAN	3.000	MODE	1.000
STD DEV	13.541	VARIANCE	183.345	MINIMUM	1.000
MAXIMUM	53.000				

VALID CASES 839 MISSING CASES 3

RSEX Respondent's Gender

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Female	1	182	21.6	21.8	21.8
Male	2	654	77.7	78.2	100.0
	.	6	.7	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	1.782	MEDIAN	2.000	MODE	2.000
STD DEV	.413	VARIANCE	.171	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 836 MISSING CASES 6

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QD17 Where Complete Undergrad Medical Train

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Ontario	1	487	57.8	58.2	58.2
Rest of Canada	2	121	14.4	14.5	72.6
U.S.A.	3	12	1.4	1.4	74.1
U.K.	4	105	12.5	12.5	86.6
Europe	5	40	4.8	4.8	91.4
Other	6	72	8.6	8.6	100.0
	.	5	.6	MISSING	
	TOTAL	842	100.0	100.0	

MEAN	2.171	MEDIAN	1.000	MODE	1.000
STD DEV	1.697	VARIANCE	2.879	MINIMUM	1.000
MAXIMUM	6.000				

VALID CASES 837 MISSING CASES 5

QD18 Year of Birth

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
7	2	0	0	28	12	1	15	47	22	3	56
10	2	0	0	29	12	1	16	48	23	3	59
11	2	0	1	30	12	1	18	49	22	3	61
12	1	0	1	31	14	2	19	50	23	3	64
13	2	0	1	32	14	2	21	51	24	3	67
14	3	0	1	33	14	2	23	52	35	4	71
15	2	0	2	34	16	2	25	53	33	4	75
16	5	1	2	35	13	2	26	54	42	5	80
17	6	1	3	36	21	3	29	55	31	4	84
18	1	0	3	37	10	1	30	56	19	2	86
19	4	0	4	38	19	2	32	57	28	3	90
20	11	1	5	39	13	2	34	58	21	3	92
21	5	1	6	40	20	2	36	59	18	2	95
22	5	1	6	41	25	3	39	60	21	3	97
23	8	1	7	42	29	4	43	61	9	1	98
24	12	1	9	43	29	4	46	62	10	1	99
25	11	1	10	44	22	3	49	63	3	0	100
26	18	2	12	45	13	2	51	64	1	0	100
27	9	1	13	46	20	2	53	66	1	0	100

MISSING DATA

VALUE	FREQ	VALUE	FREQ	VALUE	FREQ
.	17	99	2		

MEAN	43.329	MEDIAN	45.000	MODE	54.000
STD DEV	12.236	VARIANCE	149.720	MINIMUM	7.000
MAXIMUM	66.000				

VALID CASES 823 MISSING CASES 19

APPENDIX C

CROSS-TABULATED TABLES

TABLE C4.1 PHYSICIANS' PRESCRIBING EXPERIENCE BY PRESCRIPTION VOLUME

Variable	Mean	Number of Prescriptions Per Week					Eta	All Physicians
		0 - 1	2 - 15	16 - 30	31 - 70	> 70		
Inefficient Drugs	Percent	29.2%	27.0%	23.7%	24.8%	28.2%	.08	25.9%
Generic Drugs	Percent	47.1%	55.4%	52.4%	48.4%	51.7%	.08	51.5%
Patient Requests	Number	0.2	0.7	1.8	3.4	4.4	.34**	2.5
	Density*	.19	.09	.07	.04	.22	.22**	.07
Suggested Reductions	Number	1.1	2.5	4.2	7.3	11.2	.47**	6.2
	Density*	.17	.30	.16	.14	.09	.41**	.20
Unnecessary Prescriptions	Number	0.2	0.4	1.3	3.4	4.8	.38**	2.4
	Density*	.17	.04	.05	.07	.04	.13*	.05
Discussions with Patients	Number	3.1	10.7	19.8	26.5	45.0	.40**	24.9
	Density*	2.1%	1.3	.78	.54	.35	.29**	.79
Number of Physicians		174	168	161	161	178	--	842

* Density coefficients are numbers of requests, reductions, prescriptions and discussions per week divided by number of patient visits per week.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C4.2 PROFESSION OR GOVERNMENT CONTACTS IN LAST TWO YEARS BY PRESCRIPTION VOLUME

	Number of Prescriptions Per Week						
Mean	0 - 1	2 - 15	16 - 30	31 - 70	> 70	Eta	All Physicians
Number of Seminars	2.0	2.1	2.2	3.1	5.0	.24**	3.0
Number of CME Courses	0.8	2.1	1.3	1.9	2.5	.11	1.9
Number of Government Reviews	0.0	0.0	0.0	0.0	0.3	.08	0.1
Number of Clinical Drug Trials	0.4	1.9	0.7	1.0	0.4	.14**	0.9
Number of Calls from Pharmacist	4.0	3.4	3.0	2.8	7.5	.16**	4.2
Profession Contacts Index*	6.7	9.0	6.9	8.6	15.1	.20**	9.8
Number of Physicians	174	168	161	161	167	--	842

* This is an additive index summing the number of times a physician attended seminars and CME courses, had her/his prescribing practices reviewed, participated in clinical drug trails, and had been called by a pharmacist. Scores on the index range from 0 to 185 and average 9.8.

** $p \leq .01$.

TABLE C4.3 CONTACTS WITH PHARMACEUTICAL COMPANIES IN LAST TWO YEARS BY PRESCRIBING FREQUENCY

Mean	Number of Prescriptions Per Week					Eta	All Physicians
	0 - 1	2 - 15	16 - 30	31 - 70	> 70		
Number of Visits	14.7	14.9	38.8	66.9	94.4	.37**	50.8
Number of Seminars	3.9	3.2	4.2	6.1	7.8	.20**	5.2
Number of Surveys	1.3	1.6	1.8	2.6	4.3	.22**	2.5
Number of Drug Trials	0.2	0.8	0.5	0.4	0.8	.14**	0.6
Company Contacts Index*	18.4	19.8	43.8	73.3	99.7	.37**	56.4
Number of Physicians	174	168	161	161	178	--	842

* This is an additive index summing the number of times a physician has been visited by a pharmaceutical company representative, has attended a seminar sponsored by a pharmaceutical company, received a drug company survey, and participated in a drug trial sponsored by a pharmaceutical company. Scores on the index range from 0 to 1016 and average 56.4.

** $p \leq .01$.

TABLE C4.4 BENEFITS FROM PHARMACEUTICAL COMPANIES IN PAST TWO YEARS

BY PRESCRIPTION VOLUME

	Number of Prescriptions Per Week						
Percent Accepting:	0 - 1	2 - 15	16 - 30	31 - 70	> 70	Cramer's V (Eta)	All Physicians
Meals	37.3%[a]	45.2%	56.6%	64.4%	68.4%	.21**	57.0%
Conference Fees	1.8%	11.4%	9.6%	11.5%	11.1%	.91	10.2%
Stationery	20.7%	41.3%	46.3%	52.5%	59.8%	.21**	47.7%
Travel Expenses	5.3%	12.7%	8.9%	5.8%	1.8%	.15**	7.1%
Office Services	0.0%	2.4%	1.9%	1.9%	1.2%	.06	1.7%
Computer Equipment	0.0%	0.6%	0.6%	2.5%	7.1%	.17**	2.6%
Mean							
Index of Benefits[b]	0.6	1.1	1.2	1.4	1.5	(.23**)	1.3
Number of Physicians	174	168	161	161	178	--	842

[a] Entries read as: "37.3 percent of physicians writing not more than one prescription per week accepted meals from pharmaceutical company representatives; 45.3 percent of those writing from 2 to 15 prescriptions per week accepted such meals," and so on.

[b] This is an additive index summing the number of positive responses to the questions regarding physicians' acceptance of meals, conference fees, stationery, travel expenses, office services, and computer equipment. Scores on the index range from 0 to 5 and average 1.3.

** $p < .01$.

TABLE C4.5 RESTRICTIONS ON PHARMACEUTICAL COMPANY REPRESENTATIVES BY PRESCRIPTION VOLUME

	Number of Prescriptions Per Week*					
	0 - 1	2 - 15	16 - 30	31 - 70	> 70	All Physicians
No Restrictions	33.7%	37.7%	37.0%	30.2%	32.0%	34.4%
Some Restrictions	22.6%	40.3%	56.5%	58.5%	58.1%	51.2%
No Visits	39.6%	22.1%	6.5%	11.3%	9.9%	14.4%
Tau C =			-.03			
Number of Physicians	174	168	161	161	178	842

* Figures are column or vertical percents.

TABLE C4.6 INDICES OF PROFESSION CONTACTS, COMPANY CONTACTS AND BENEFITS BY AGE, GENDER AND SPECIALTY

	Mean			
	Profession Contact Index	Company Contacts Index	Benefits Index	Number of Physicians
Age				
< 35	18.0	66.7	1.5	162
35 - 39	7.8	52.5	1.2	157
40 - 49	10.7	59.4	1.2	225
50 - 59	9.9	43.0	1.3	146
> 59	9.6	57.6	1.1	133
Eta =	.06	.09	.12*	
Gender				
Female	7.5	59.8	1.1	182
Male	10.5	55.8	1.3	654
Eta =	.08*	.01	.06	
Specialty				
GP	11.2	77.7	1.3	440
Surgery	5.6	34.3	0.9	93
Medicine	9.4	31.7	1.2	189
Other	8.2	23.9	1.2	120
Eta =	.12*	.28**	.13**	
All Physicians	9.8	56.4	1.3	842

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C4.7 INDICES OF PROFESSION CONTACTS, COMPANY CONTACTS AND BENEFITS BY PERCENT FEE-FOR-SERVICE AND PRACTICE TYPE

	Mean			
	Profession Contacts Index	Company Contacts Index	Benefits Index	Number of Physicians
% Income from Fee-for-Service				
0 - 33%	8.5	27.5	1.2	146
34 - 65 %	11.7	25.4	1.5	55
66 - 100%	9.9	63.9	1.2	570
Eta =	.04	.19**	.07	
Practice Type				
Solo	7.5	64.9	1.0	239
Group	11.6	88.0	1.5	118
Partnership	5.8	70.9	1.1	38
Hospital	9.0	23.2	1.3	238
CMC/HMO	8.9	56.1	1.1	24
Mixed	12.7	62.9	1.3	185
Eta =	.14*	.27**	.16**	
All Physicians				

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C5.1 ADEQUACY OF MEDICAL TRAINING BY PRESCRIPTION VOLUME

Medical Training	Number of Prescriptions Per Week* 0 - 1	2 - 15	16 - 30	31 - 70	> 70	All Physicians
Undergraduate						
Inadequate	25.0%	25.3%	25.0%	22.0%	26.0%	24.7%
Neutral	13.3	18.7%	19.4	17.0	16.9	17.2
Adequate	61.7	56.0	55.6	61.0	57.1	58.1
Tau C =			.00			
Postgraduate						
Inadequate	15.3%	10.4%	15.2%	9.7%	15.2%	13.1
Neutral	9.9	12.3	9.5	13.5	15.2	12.3
Adequate	74.8	77.3	75.3	76.8	69.6	74.7
Tau C =			-.03			
Number of Physicians	174	168	161	161	178	842

* Figures are column or vertical percents.

TABLE C5.2 SATISFACTION WITH KNOWLEDGE ABOUT PRESCRIPTION DRUGS BY PRESCRIPTION VOLUME

	Percent Satisfied with Knowledge Concerning*									
	Drug Costs	Drug Effectiveness	Equiv. of Competing Brands	Equiv. of Similar Drugs	Needs of Special Groups	Abuse of Prescr. Drugs	Psychotropic Drugs	Non-Drug Alternatives	Index of Satisfaction with Know.*	Number of Physicians
Prescriptions Per Week										
0 - 1	9.0%	53.7%	18.5%	24.1%	41.1%	39.8%	40.0%	34.3%	2.1	174
2 - 15	12.1%	56.7%	20.0%	23.0%	34.2%	40.1%	36.9%	35.6%	3.0	168
16 - 30	19.0%	64.7%	20.5%	22.2%	37.3%	55.8%	28.6%	37.2%	3.0	161
31 - 70	15.7%	66.9%	19.6%	26.4%	45.5%	51.6%	41.4%	33.3%	3.0	161
> 70	17.5%	69.7%	20.8%	27.0%	44.9%	46.3%	38.8%	28.0%	3.0	178
Tau C (Eta)	.04	.10**	-.04	.02	.08**	.02	.03	-.08**	(.04)	
All Physicians	15.1%	63.0%	20.1%	24.6%	40.6%	47.2%	37.0%	33.8%	3.0	842

* The variables range from a low of 1, indicating that physicians are "very dissatisfied" with their knowledge in the area, to a high of 5, indicating that they are "very satisfied". Figures in table measure "satisfied" and "very satisfied" responses.

* This index averages physicians' scores over the eight items in the table. The scores range from 1 to 5; the higher the score, the more satisfied the physician over all areas indicated.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C5.3 PROBLEMS WITH KEEPING UP PROFESSIONAL KNOWLEDGE ABOUT PRESCRIPTION DRUGS

BY PRESCRIPTION VOLUME

	Percent Rating Factor a Problem[a]							
	Rate of Introduct.	Lack of Time	Inadequate Info. Sources	Distrust Available Info.	Inability to Assess Info.	Lack of Interest	Index of Problems With Know.[b]	Number of Physicians
Prescriptions Per Week								
0 - 1	29.5%	32.7%	22.1%	22.3%	16.7%	4.0%	2.4	174
2 - 15	27.0	33.5	16.5	27.6	19.5	3.1	2.5	168
16 - 30	24.8	34.2	17.3	28.0	23.6	2.0	2.5	161
31 - 70	27.0	40.9	14.5	32.7	27.4	.0	2.5	161
> 70	29.0	46.9	19.4	32.4	34.5	1.2	2.7	178
Tau C (Eta)	.02	.13**	.01	.08**	.13**	-.01	(.11*)	
All Physicians	27.4%	38.2%	17.7%	29.1%	25.1%	1.9%	2.5	842

[a] Variables range from a low of 1, indicating that the factor is "not a problem" to a high of 5, indicating it is "a serious problem". Figures in table include those scoring 4 or 5 on the response scale.

[b] This index averages physicians' scores over the six items in the table. The scores range from 1 to 5; the higher the score, the more serious the problems with knowledge about prescription drugs overall.

* $.01 < \leq .05$.

** $p \leq .01$.

TABLE C5.4 IMPORTANCE OF PHYSICIANS' INFORMATION SOURCES BY PRESCRIPTION VOLUME

	Percent Rating Source Important[a]											
	Journal Articles	Prof. Mtgs.	Hosp. Rounds	Medical Educ. Courses	Peer Consult.	Clin. Pharm.	Pharm. Company Reps.	Seminars by Pharm. Companies	Adverts.	Index of Prof. Sources[b]	Index of Corporate Sources[c]	Number of Physicians
Prescriptions Per Week												
0 - 1	74.8%	73.1%	44.4%	51.4%	65.7%	33.6%	9.9%	16.8%	11.2%	3.5	2.2	174
2 - 15	75.9	69.1	54.8	57.6	62.7	40.5	0.5	15.9	9.0	3.6	2.2	168
16 - 30	79.2	73.1	47.1	64.3	73.0	37.6	20.8	22.8	17.7	3.6	2.5	161
31 - 70	72.3	74.4	48.7	65.0	68.8	33.8	22.0	26.9	11.3	3.6	2.5	161
> 70	58.8	76.4	48.5	76.3	69.1	27.3	25.1	37.1	15.3	3.5	2.8	178
Tau C (Eta)	-.11**	.04	-.01	.15**	.02	-.09**	.18**	.19**	.05	(.07)	(.24**)	
All Physicians	71.8%	73.3%	49.0%	64.0%	68.0%	34.5%	18.7%	24.6%	12.0%	3.5	2.5	842

[a] The variables range from a low of 1, indicating that the information source is "not important", to a high of 5, indicating that it is "very important". Figures in table include those scoring 4 or 5 on the response scale.

[b] This index averages physicians' scores over the first six items in the table from journal articles to consultations with clinical pharmacists. Scores range from 1 to 5; the higher the score, the higher the overall rating of these scores.

[c] This index averages physicians' scores over the last three items in the table from seminars sponsored by pharmaceutical companies to advertisements. Scores range from 1 to 5; the higher the scores, the higher the overall rating of these sources.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C5.5 SELECTED INFORMATION VARIABLES BY AGE, GENDER AND SPECIALTY

	Mean:								
	Percent Adequate Under-grad. Training*	Satis. Drug Costs	Satis. Drug Effect	Satis. Non-Drug Altern.	Index of Satis. with Know.	Index of Problems with Know.	Index of Prof. Sources	Index of Corporate Sources	Number of Physicians
Age									
< 35	54.8%	2.3	3.6	2.9	3.0	2.5	3.6	2.5	162
35 - 39	66.4	2.4	3.7	3.1	3.0	2.6	3.5	2.2	157
40 - 49	61.2	2.4	3.6	3.2	3.0	2.5	3.5	2.4	225
50 - 59	55.7	2.5	3.6	3.1	3.0	2.5	3.5	2.6	146
> 59	49.2	2.3	3.5	2.9	2.8	2.4	3.7	2.7	133
Eta (Tau C) =	(.00)	.07	.09	.09	.12*	.08	.08	.20**	
Gender									
Female	54.3%	2.3	3.5	3.2	3.0	2.6	3.6	2.5	182
Male	59.2	2.4	3.6	3.0	3.0	2.5	3.6	2.5	654
Eta (Cram. V) =	(.07)	.04	.09**	.07**	.01	.05	.01	.01	
Specialty									
GP	55.0%	2.3	3.6	3.0	3.0	2.7	3.5	2.6	440
Surgery	54.3	2.3	3.5	3.1	2.9	2.4	3.5	2.6	93
Medicine	64.0	2.5	3.7	3.2	3.1	2.3	3.6	2.3	189
Other	64.4	2.4	3.6	3.1	3.0	2.4	3.6	2.3	120
Eta (Cram. V) =	(.09)	.07	.08	.09	.10*	.22**	.08	.16**	
All Physicians	58.1%	2.4	3.6	3.0	3.0	2.5	3.6	2.5	842

* Entries read as: "54.8 percent of physicians under 35 said that their undergraduate medical training was adequate; 66.4 percent of those between 35 and 39 said that it was adequate," and so on.

* $.01 < \leq .05$.

** $p \leq .01$.

TABLE C5.6 SELECTED INFORMATION VARIABLES BY PERCENT FEE-FOR-SERVICE AND PRACTICE TYPE

	Mean:								
	Percent Adequate Under-grad. Training	Satis. Drug Costs	Satis. Drug Effect	Satis. Non-Drug Altern.	Index of Satis. with Knowl.	Index of Problems With Know.	Index of Prof. Sources	Index of Corporate Sources	Number of Physicians
% Income Fee-for-Service									
0 - 33%	55.5%	2.3	3.5	3.0	2.9	2.6	3.6	2.3	146
34 - 65%	66.7	2.6	3.6	3.1	3.0	2.4	3.7	2.2	55
66 - 100%	57.9	2.4	3.6	3.1	3.0	2.5	3.5	2.5	570
Eta (Tau B) =	(.01)	.09	.08	.03	.04	.05	.09	.12**	
Practice Type									
Solo	58.7%	2.4	3.5	3.0	2.9	2.6	3.5	2.5	239
Group	53.4	2.4	3.7	2.9	3.1	2.7	3.5	2.5	118
Partnership	71.4	2.4	3.6	3.1	3.0	2.6	3.5	2.6	38
Hospital	59.7	2.4	3.7	3.1	3.0	2.3	3.7	2.3	238
CHC/HSO	54.2	2.7	3.6	3.2	3.1	2.5	3.4	2.4	24
Mixed	57.4	2.3	3.5	3.0	2.9	2.6	3.5	2.6	185
Eta (Cram. V) =	(.06)	.09	.10	.08	.11	.21**	.13*	.13*	
All Physicians	58.1%	2.4	3.6	3.0	3.0	2.5	3.6	2.5	842

* $.01 < p \leq .05$

** $p \leq .01$.

TABLE C6.1 ATTITUDES TOWARDS PRESCRIPTION DRUGS BY PRESCRIPTION VOLUME

	Number of Prescriptions Per Week[a]						
	0 - 1	2 - 15	16 - 30	31 - 70	> 70	Tau C	All Physicians
Percent agreeing that dollars had positive impact[b]	44.2%	36.6	45.6	59.1	56.4	.11**	48.6%
Percent thinking too much emphasis on drugs[c]	55.6%	62.3	54.4	57.0	48.3	-.04	55.4%
Percent writing more prescriptions[d]	8.3%	8.2	15.3	17.1	24.1	.14**	15.8%
Percent saying elderly frequently have prescriptions increased[e]	41.9%	24.1	23.4	29.5	39.3	.10**	30.3%
Number of Physicians	174	168	161	161	178		842

[a] Entries read as: "44.2% of physicians writing not more than one prescription per week agree or strongly agree that the dollars spent on prescription drugs have had a positive impact on the health status of Ontario residents."

[b] Percent agreeing or strongly agreeing.

[c] Percent thinking "too much emphasis" or "much too much emphasis."

[d] Percent writing "more" or "many more.

[e] Percent saying "frequently" or "almost always."

** $p \leq .01$.

TABLE C6.2 IMPORTANCE OF FACTORS LEADING TO INCREASED DRUG COSTS BY PRESCRIPTION VOLUME

	Percent Rating Factor as Important*									
	Aging Pop.	Avail of New Drugs	Drug Company Profits	Little Emphasis on Prev. Care	Incr. Public Enrol.	Dispensing Fees	Hi-Tech Drugs	Lack of Info Re. Altern.	Lack of Personal Responsi-bility	Number of Physicians
Prescriptions Per Week										
0 - 1	89.9%	64.3%	41.7%	45.3%	52.3%	38.6%	50.5%	31.3%	55.8%	174
2 - 15	84.8	64.8	38.9	47.6	50.6	27.3	56.3	37.3	60.5	168
16 - 30	84.4	65.0	40.4	42.5	50.6	32.7	49.4	36.3	56.1	161
31 - 70	85.4	70.1	41.2	45.6	50.3	28.8	56.6	34.0	62.6	161
> 70	91.4	80.6	40.9	36.8	55.7	32.9	62.6	28.9	61.8	178
Tau C	.01	.09**	-.01	-.07*	.03	-.05	.05	-.06*	.03	
All Physicians	87.1%	69.4%	40.6%	43.3%	52.0%	31.7%	55.5%	33.6%	59.6%	842

* The variables range from a low of 1, indicating that the factor is "not important, to a high of 5, indicating that it is "very important". Figures in table include those scoring 4 or 5 on the response scale.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C6.3 IMPORTANCE OF FACTORS INFLUENCING PHYSICIANS' PRESCRIBING DECISIONS BY PRESCRIPTION VOLUME

	Percent Rating Factor as Important[a]										
	Patient's Economic Situation	Enrolment in Drug Plan	Cost of Drug	Need for Defensive Medicine	Pressure from Patients	Need to do Something	Peer Influence	Drug Co. Info.	Index of Economic Factors[b]	Index of Non-Econ. Factors[c]	Number of Physicians
Prescriptions Per Week											
0 - 1	38.3%	43.5%	34.8%	22.2%	10.9%	8.7%	6.5%	4.3%	2.9	1.9	174
2 - 15	45.2	38.2	47.0	9.3	4.8	2.4	7.3	2.4	3.1	1.7	168
16 - 30	63.3	49.7	64.8	13.4	8.9	1.9	5.2	5.1	3.4	1.9	161
31 - 70	63.9	50.9	62.5	18.1	13.8	5.1	5.7	5.0	3.5	2.0	161
> 70	66.3	65.2	62.4	18.2	18.6	15.9	5.1	5.1	3.7	2.2	178
Tau C (Eta)	.16**	.19**	.14**	.10**	.14**	.10**	.02	.04*	(.23**)	(.22**)	
All Physicians	58.3%	50.8%	57.5%	15.3%	11.6%	6.7%	5.8%	4.9%	3.4	1.9	842

[a] The variables range from a low of 1, indicating that the factor is "not important" in influencing the physician's prescribing decision, to a high of 5, indicating that it is "very important". Figures in table include those scoring 4 or 5 on the response scale.

[b] This index averages physicians' scores over the first three items in the table from patient's economic situation to cost of a drug. Scores range from 1 to 5; the higher the score, the higher the overall rating of these factors.

[c] This index averages physicians' scores over the last five items in the table from need for defensive medicine to drug company information. Scores range from 1 to 5; the higher the score, the higher to overall rating of these factors.

** $p \leq .01$.

* $.01 < \leq .05$.

TABLE C6.4 SELECTED PROFESSIONAL ISSUE VARIABLES BY AGE, GENDER AND SPECIALTY

	Percent Agreeing/Saying*			Mean Importance of				
	Dollars Positive Impact	Too Much Emphasis on Drugs	Elderly Increased Prescr.	Lack of Information Re. Altern.	Lack of Personal Responsibility	Index of Economic Factors	Index of Non-Economic Factors	Number of Physicians
Age								
< 35	51.6%	61.2%	27.6%	2.9	3.7	3.1	2.1	162
35 - 39	37.6	64.5	26.1	2.9	3.6	3.3	1.9	157
40 - 49	47.1	58.9	30.6	2.9	3.7	3.4	1.9	225
50 - 59	46.0	41.5	36.8	2.8	3.4	3.3	1.9	146
> 59	63.6	46.7	28.3	3.0	3.6	3.2	1.9	133
Tau (Eta) =	.08**	-.11**	.04	(.07)	(.08)	(.11)	(.13*)	
Gender								
Female	38.7%	60.7%	28.0%	3.2	3.7	3.6	2.0	182
Male	51.6	53.6	30.8	2.8	3.6	3.4	1.9	654
Cram. V (Eta) =	.11**	.08	.10	(.13**)	(.04)	(.08*)	(.01)	
Specialty								
GP	50.1%	53.2%	35.1%	3.0	3.7	3.6	2.1	440
Surgery	41.6	47.8	23.4	2.8	3.9	3.2	1.9	93
Medicine	48.9	62.6	21.3	2.8	3.4	3.2	1.6	189
Other	48.2	59.0	30.0	2.9	3.5	2.9	1.9	120
Cram. V (Eta) =	.05	.08	.09	(.09)	(.14**)	(.23**)	(.28**)	
All Physicians	48.6%	55.4%	30.3%	2.9	3.6	3.4	1.9	842

* Entries read as: "51.6 percent of physicians under 35 agree that the dollars spent on prescription drugs have had a positive impact; 37.6 percent of those between 35 and 39 agree that the dollars have had such an impact," and so on.

* $.01 < p \leq .05$

** $p \leq .01$

TABLE C6.5 SELECTED PROFESSIONAL ISSUE VARIABLES BY PERCENT FEE-FOR-SERVICE AND PRACTICE TYPE

	Percent Agreeing/Saying*			Mean Importance of				
	Dollars Positive Impact	Too Much Emphasis on Drugs	Elderly Increased Prescr.	Lack of Information Re. Altern.	Lack of Personal Responsibility	Index of Economic Factors	Index of Non-Economic Factors	Number of Physicians
% Income Fee-for-Service								
0 - 33%	40.6%	63.3%	26.8%	3.0	3.5	3.4	1.9	146
34 - 65%	45.5	57.4	22.7	2.8	3.4	2.9	1.8	55
66 - 100%	51.6	54.3	32.1	2.9	3.7	3.4	2.0	570
Tau B (Eta) =	.09**	.04	.02	(.04)	(.08)	(.12**)	(.08)	
Practice Type								
Solo	48.8%	51.0%	31.3%	3.0	3.7	3.3	1.9	239
Group	52.6	61.9	33.6	3.0	3.8	3.8	2.1	118
Partnership	61.9	42.9	25.0	3.1	3.5	3.6	2.0	38
Hospital	48.3	59.2	26.1	2.7	3.5	3.1	1.8	238
CHC/HSO	50.0	62.5	14.3	3.1	3.6	3.8	1.9	24
Mixed	44.8	51.7	34.2	3.0	3.6	3.4	2.0	185
Cram. V (Eta) =	.09	.10	.08	(.11)	(.11)	(.20**)	(.16**)	
All Physicians	48.6%	55.4%	30.3%	2.9	3.6	3.4	1.9	842

* Entries read as: "40.6 percent of physicians deriving not more than 33 percent of their income from fee-for-service payments agree that the dollars spent on prescription drugs have had a positive impact; 45.5 percent of those deriving 34 to 65 percent of their income from fee-for-service agree that the dollars have had such an impact," and so on.

** $p \leq .01$.

TABLE C7.1 STRATEGIES FOR PATIENTS BY PRESCRIPTION VOLUME

	Percent Approving*						
	Expanding Drug Benefit Plan	Smart Card	Annual $50.00 Co-Payment	Limiting Insured Drugs	Ending OTC Coverage	Regulating Drug Substitutions	Number of Physicians
Prescriptions Per Week							
0 - 1	18.8%	68.1%	46.4%	49.3%	48.6%	75.7%	174
2 - 15	18.8	73.3	55.2	47.9	58.3	73.9	168
16 - 30	14.9	71.9	57.5	46.0	59.4	74.4	161
31 - 70	13.8	69.8	64.3	51.3	64.6	70.3	161
> 70	14.9	64.6	68.6	52.6	68.0	74.3	178
Tau C	-.11**	-.03	.12**	.02	.11**	-.01	
All Physicians	16.2%	69.5%	58.8%	49.4%	60.2%	73.7%	842

* The variables range from a low of 1, indicating that physicians "strongly disagree" of the proposal, to a high of 5, indicating that they "strongly approve" of it. Figures measure "approve and "strongly approve" response.

* $.01 < p \leq .05$.

** $p \leq .01$.

TABLE C7.2 STRATEGIES FOR DRUG MANUFACTURERS

Strategy	Response*			Total
	Disapprove (1,2)	Neutral (3)	Approve (4,5)	
Regulating advertisements	4.1%	11.7%	84.2%	100.0%
Licensing only improved drugs	20.5	16.0	63.5	100.0
Registering benefits over $100	23.2	30.5	46.3	100.0
Covering limited drug products	32.0	23.7	44.3	100.0
Two year patent protection	53.1	25.1	21.8	100.0

* Ratings range from 1, "strongly disapprove," to 5, "strongly approve."

TABLE C7.3 STRATEGIES FOR PHARMACISTS BY PRESCRIPTION VOLUME

	Percent Approving*						
	Requiring Lower Cost Substitutes	Control System Computerized	Requiring Info on on Each Prescr.	Fixed Fee For Dispensing Costs	Reporting Abuse to Physician	Notifying Patients of Substitutes	Number of Physicians
Prescriptions Per Week							
0 - 1	59.7%	71.9%	69.9%	22.9%	81.5%	74.5%	174
2 - 15	58.9	67.5	60.6	34.4	87.8	77.4	168
16 - 30	59.0	70.0	60.2	32.9	91.9	77.5	161
31 - 70	54.1	65.4	61.6	30.2	92.5	74.1	161
> 70	49.1	51.7	50.0	32.4	93.7	79.2	178
Tau C	-.07**	-.10**	-.12**	-.02	.07**	.02	
All Physicians	56.0%	65.0%	60.1%	30.8%	89.7%	76.6%	842

* The variables range from a low of 1, indicating that physicians "strongly disapprove" of the proposal, to a high of 5, indicating that they "strongly approve" of it. Figures in table measure "approve" and "strongly approve" responses.

** $p \leq .01$.

TABLE C7.4 STRATEGIES FOR PRESCRIBERS BY PRESCRIPTION VOLUME

	Percent Approving*						
	Professional Review Syst.	Hospital Monitoring Committees	Accredited Education Courses	Random Audits of Physicians	Eliminating Special Authorization	Recording Physicians' I.D.	Number of Physicians
Prescriptions Per Week							
0 - 1	62.8%	52.1%	80.7%	38.0%	13.5%	51.8%	174
2 - 15	68.1	55.4	75.2	43.0	11.6	43.8	168
16 - 30	69.6	58.1	84.4	38.4	12.4	38.9	161
31 - 70	68.1	60.0	81.0	36.7	16.7	38.9	161
> 70	52.0%	48.9	82.2	34.3	17.3	33.1	178
Tau C	-.07**	-.01	-.01	-.05	-.02	-.13**	
All Physicians	63.9%	54.9%	81.8%	38.1%	14.3%	40.9%	842

* The variables range from a low of 1 indicating that physicians "strongly disapprove of the proposal, to a high of 5, indicating that they "strongly approve" of it. Figures measure "approve" and "strongly approve" responses.

** $p \leq$.

TABLE C7.5 SELECTED STRATEGIES BY AGE, GENDER AND SPECIALTY

	Mean Approval of						
	Annual $50.00 Co-Payment	Licensing New Drug	Regulating Ads	Central Computerized System	Information Each Prescr.	Recording Physicians' I.D	Number of Physicians
Age							
< 35	3.7	3.4	4.2	4.0	3.8	3.1	162
35 - 39	3.6	3.7	4.2	3.9	3.8	3.3	157
40 - 49	3.6	3.7	4.1	3.7	3.6	3.2	225
50 - 59	3.8	3.6	4.1	3.7	3.5	3.0	146
> 59	3.2	3.7	4.1	3.4	3.3	2.9	133
Eta =	.16**	.11*	.06	.16**	.14**	.12*	
Gender							
Female	3.3	3.7	4.2	4.0	3.8	3.0	182
Male	3.7	3.6	4.1	3.7	3.5	3.1	654
Eta =	.11**	.03	.05	.10**	.09**	.04	
Speciality							
GP	3.5	3.7	4.2	3.8	3.6	3.1	440
Surgery	3.7	3.5	4.1	3.7	3.6	2.9	93
Medicine	3.6	3.5	4.2	3.8	3.6	3.3	189
Other	3.7	3.4	4.1	3.6	3.6	3.3	120
Eta =	.04	.10*	.05	.06	.01	.11*	
All Physicians	3.6	3.6	4.2	3.8	3.1	3.1	842

* $.01 < p < .05$.

** $p \leq .01$.

TABLE C7.6 SELECTED STRATEGIES BY PERCENT FEE-FOR-SERVICE AND PRACTICE TYPE

	Mean Approval of						
	Annual $50.00 Co-Payment	Licensing New Drug	Regulating Ads	Central Computerized System	Information Each Prescr.	Recording Physicians' I.D.	Number of Physicians
Income Fee-for-Service							
0 - 33%	3.4	3.7	4.3	4.0	4.0	3.4	146
34 - 65%	3.4	3.6	4.1	4.0	3.5	3.3	55
66 - 100%	3.7	3.6	4.1	3.7	3.5	3.0	570
Eta =	.11**	.03	.08	.12**	.15**	.13**	
Practice Type							
Solo	3.5	3.7	4.1	3.5	3.6	3.0	239
Group	3.7	3.7	4.2	3.8	3.4	3.0	118
Partnership	3.6	3.5	4.0	3.5	3.6	2.9	38
Hospital	3.6	3.5	4.1	3.9	3.7	3.4	238
CMC/HSO	3.3	3.5	4.4	4.3	3.9	3.3	24
Mixed	3.5	3.6	4.2	3.7	3.6	3.0	185
Eta =	.06	.06	.09	.18**	.12*	.14**	
All Physicians	3.6	3.6	4.2	3.8	3.8	3.1	842

* $.01 < p \leq .05$.

** $p \leq .01$.